# Swedish forest relations with Asia and Latin America

An anthology

**Editor Sten Norén**

Swedish University of Agricultural Sciences
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Cover photo: Small-holder teak plantation in Laos

Photo by Anders Malmer

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# Swedish forest relations with Asia and Latin America, an anthology

***Editor: Sten Norén, Forestry Consultant at IRDC, SLU 1970-1994***

# Foreword.

*By Sten Norén*

## Forestry development in Sweden

The forests of Sweden have for a long time contributed to the development of this country. From the 12th to the 19th century, when also Finland was a part of Sweden, the most important product from the forests was charcoal, necessary for the production of iron, used among other things to make guns and swords and other items for export to countries in frequent wars in Europe. By the 18th century the region of Bergslagen in central Sweden was almost denuded of good forests due to use of wood for mining and charcoal making.Tar was also an important, exportable forest product for maintenance of the wooden ships and their abundant ropes.

When the steam engine had been invented, in mid-1800, sawn wood became another important export forest product and northern Sweden became deprived of almost all big trees. Then, when the pulp- and paper-technique developed in the end of the century also smaller trees could be utilized. By the end of the 1800s the Swedish forests were in a real bad shape.

However, responsible people and authorities had started to realize the severity of the situation. At the same time agriculture had developed so that cows and sheep no longer had to be fed through forest grazing, which made natural forest regeneration almost impossible, rehabilitation and management of our forests could increase. In 1903 came our first forest law making replanting of trees obligatory. Since then the growing stock and the increment of our forests have almost doubled and forest products, still mainly sawn wood and pulp and paper, contribute to an essential part of our export. However, we were initially not very good at exporting the experiences behind this good development and the principles of sustainable and profitable forest management..

## Development aid starts

However, by the 1960´s we saw opportunities to do so. Technical aid to so called developing countries in Africa, Asia and Latin America started. In 1965 the Swedish International Development Agency, SIDA, (from 1995 Sida) was formed. Both SIDA and people from the recipient countries thought that the forestry sector could contribute to their development. Development aid in forestry from Sweden expanded quickly. Swedish foresters began to work in the tropics and got active roles, both in bilateral agreements with individual countries and through the world organisation on agriculture and forestry, FAO, and other organisations. Consulting companies specialising on forestry development assistance, such as Swedforest, ORGUT, Interforest, Silviconsult, Silvi Nova, were started. Also traditional Swedish forest companies started to be more international. Among much else, in the 1970s Sweden played an important role in the development of the then rather new concept *social forestry*.

As an example, by 1987/88 about 500 million SEK, or 10% of the total Swedish bilateral development assistance budget through SIDA, were spent on forestry, forest industries and soil conservation programmes. And hundreds of Swedish foresters

and other professionals worked in forestry programmes for SIDA, consulting companies, FAO and other organisations all over the developing world.

However, during 1990´s the forestry aid programmes of SIDA decreased drastically, due to changed priorities in the development assistance policies, not only by SIDA but all over the world. A few programmes, e.g. in Vietnam, Laos and Tanzania, continued as more general rural development programmes with only small forestry components. As one consequence, opportunities for Swedish foresters to work some years abroad also more or less disappeared, except for those who had joined some of the internationally operating consultant companies.

**KSLA activities**

In the first decade of the 2000s, the Royal Swedish Academy of Agriculture and Forestry (KSLA) was very active in international forestry issues. It began to cooperate with an African forest research supporting programme (AFORNET) and initiated and implemented with that and FAO a project funded by Sida called "Lessons learnt on Sustainable Forest Management in Africa". One of the ideas behind that programme was that the African countries perhaps had something to learn from the development of the Swedish forestry sector, briefly described above, and from all the forest projects SIDA had previously supported in Africa.

It was found that the forest projects in Africa supported by SIDA were poorly documented. Very few in-depth evaluations had been done and relevant documents were to a high extent difficult to find within SIDA/Sida and the consulting companies. It was felt that it would be useful to record as much as possible of what Swedish individuals and institutions had been doing in the wide field of forestry, in collaboration with colleagues and counterpart institutions in Africa, before this knowledge was lost.

Thus in 2009 KSLA requested three foresters who had worked most if their lives in the development aid business, *Björn Lundgren, Reidar Persson* and *Sten Norén*, to write a summary report on "Swedish-African forest relations". This was done and the report was published in KSLA Tidskrift nr 2/2011.

**What about Asia and Latin America?**

The Swedish forestry development programmes on these continents during 1970s and 1980s were as big, some even bigger, than those as in Africa,. In Vietnam SIDA supported its biggest project ever, the initially controversial but in the end successful development of a pulp and paper mill (Bai Bang). In India, SIDA also had a big programme with emphasis on social forestry. The most important SIDA-programme on forestry in Latin America was in Nicaragua. Like with Africa, it was felt that also these experiences should be documented before they fall into oblivion.

However, the three authors of the KSLA-report do not have the same wide experience of the programmes on these continents and, above all; KSLA did not have the resources to fund such a report. Then I contacted a number of friends and colleagues I had got to know over the years and who had been working for some time in projects supported by SIDA, FAO, private companies or other organisation in Asia or in Latin America. I asked them to write a short, not more than 3-5 pages, description of the projects they had worked in and share their experiences from them. Of course I wanted to have reports from the most important project SIDA had supported, but I also would like to have reports from

other projects, often run by FAO, in some cases in more "odd" countries. As the Africa report was in English, I asked them to write in English. Together these reports would form an anthology with me as editor.

I got very positive responses from almost all of these friends. I did not give detailed instructions how to write, I was prepared to accept quite varied types of stories and in their varied standard in English language. But I did give comments and adjusted the texts and changed them so that all had the same layout. Thus the text often went back and forth between the author and me a number of times, but I saw it as important that the original author always had the last word. In some cases I have translated a Swedish text written by the authors (e.g. in old numbers of U-landsskogisen) into English, but then I have always assured to get it approved by the author.

It has taken time, I got the first article in March 2012, but now I have got 31 articles all together, 21 about Asian projects, 8 on Latin American projects and 2 from Oceania. Some of the articles I have written myself about projects I have worked with. This is not a complete picture of all the Swedish-connected projects on these continents, but I think it gives a rather good picture of what was going on. I want to thank all the authors for the time and effort they have spent to make this anthology possible.

Like in the KSLA report on Africa, which had a list of over 300 people who had worked in Africa, this report, as Appendix 1, also contains a list of Swedes, (including non-Swedes having worked in Swedish-supported projects) who have worked with forests and forestry/agroforestry in Asia and Latin America for SIDA/Sida, for consultant companies, for FAO or other organisation for at least one year. This list, which of course is not complete, also contains over 300 persons, of whom several also have worked in Africa.

In this report I have not attempted to describe the development of the Swedish policy on development assistance and the general international development and trends of forest collaboration policies. For this I refer to separate chapters in the earlier mentioned KSLA-Tidskrift 2/2011. There you also can find a chapter which deals with "Lessons learnt" from the programmes and projects in Africa. These lessons are just as valid also for programmes and projects in Asia and Latin America.

*Björn Lundgren* and *Reidar Persson* have been advisors to me in the work with this anthology.

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Hybrid Poplar plantation in China (Photo Anders Malmer)

# Asia

## The Forestry Project of the Bai Bang Pulp and Paper Mill Project in Vietnam

*By Petter Otterstedt,*
*on various posts for Interforest in Vietnam 1976-79, 1983-86, 1992-94*

### The start of the Bai Bang Project

It is commonly argued that the Swedish support to Vietnam, which led to the Bai Bang project, had its starting point in Prime Minister Olof Palme´s speech at a Social Democratic Party Congress in Gävle 1965. In the meeting he strongly criticized USA´s military support to South Vietnam in the ongoing conflict between North and South Vietnam, and brought forward the idea of Swedish development assistance to North Vietnam. In the spring 1970 the Swedish Parliament decided to give assistace to North Vietnam with 225 million SEK for the reconstruction of the country. The Vietnamese declared that they wanted Swedish support to build up the forestry sector, or more to the point, they wanted a "paper mill". There were a lot of doubts on the Swedish side weather this was the best option for a develoment programme - both at the Ministry of Foreign Affairs and at SIDA - and these doubts would persist for a long time.

In February 1971 Jaakko Pöyry Ingengörsbyrå AB (JP) was contracted to carry out a "prefeasibility study". After several studies about location of the mill, raw material supply (not only wood), an air photo survey etc, it was proposed in 1974 to construct a pulp and paper mill with a capacity of 48 000 tons of pulp and 55 000 tons of paper. The project included also a coalfed powerstation. The selected site for the mill was at a place, which would be known as Bai Bang located in the Vinh Phu province close to the Lo river about 100 km northwest of the capital city Hanoi. In August 1974 a "Development Cooperation Agreement" was signed in Hanoi between the two parties to construct the proposed pulp and paper mill at a calculated cost of 770 million SEK, of which 97 million for the included Forestry Project.

It was also agreed to start the Project when the war was over. On the 30$^{th}$ of April 1975 Saigon fell and in September the same year the ground works started at the Bai Bang site. The mill was finally solemnly inaugurated in November 26, 1982, when all parts of the mill complex were in operation. The first deliveries of wood and bamboo arrived at the woodyard in the spring the same year.

### Organization on the Swedish side

The Swedish consultant firm WP-system had the overall management responsibility for the Bai Bang Project from an early start. However, as WP-system had no own experience of construction and running of pulp and paper mills as well as of forestry issues, several sub-consultants were engaged to cover necessary professional areas. In the Forestry Project WP-system was responsible for road construction, workshops, procurement and camps, Silviconsult for silviculture (species trials, nurseries etc) and JP for harvesting, transport, training etc. and JP also had the coordinating responsibility for the Forestry Project. In early 1980 the consortium Scanmagement was formed by four companies, JP,

Södra Skogsägarna, Cellpap and Ångpanneföreningen, and took over the full responsibility for the Bai Bang Project. Within this consortium JP had the full responsibility for the Forestry Project.

**The Forestry Project**

The goal of the Forestry Project was to ensure that the mill was supplied with enough fibrous raw material both in a short and in a long time perspective. During the course of the Project large areas were planted and a functioning organization for extraction of wood and bamboo was established. An extensive road construction program was carried out together with a maintenance organization with workshops and spare part stores. This was really a very big enterprise! Early in the Project a lots of efforts were made to test various logging and transport methods from bamboo cutting to high lead logging and rafting.

Extensive tests with different treespecies and establishment of production plantations were carried out. A "Forest Research Centre" (FRC) was in operation already from 1975 and played a very important role through the life of the Project. FRC was supported by the Project both financially and with experts. FRC has today very advanced silviculture research activities. For example the Centre has developed a method of mass production of clooned plant material of an *Acacia* hybrid (*Mangium x Auriculiformis*) and has also a seed orchard for *Acacia*. FRC is today a part of the mill organization.

A forestry vocational school located in Phu Ho was in function from the beginning. The Phu Ho school became the Forestry Project´s counterpart organization in all training matters. The importance of training became more and more evident over the years. The school received substantial support. It was however closed down in the late nineties.

**The Vietnamese organization and the Swedish personnel**

At the project start there was already a functioning Vietnamese counterpart organization, the "Forest Zone Construction Committee" which reported directly to the Ministry of Finance and was the formal recipient of all forestry equipment. This caused continuous conflicts with the forest enterprises which ran the forest operations and the local provincial organizations. After various organizational changes a new organization was formed in 1987 through a Swedish initiative. It was named "Vinh Phu Service Union" with its head office close to Bai Bang. All forestry activities on the Vietnamese side were now under one hat. This organization survived until the wood supply responsibility was moved to the mill in 1990.

When the Project started the main forestry activities were located to Ham Yen 80 km NV of Bai Bang. In 1976 there were only seven Swedish expatriates in Ham Yen of which three had a forestry background. The silviculture advisors were however stationed at Bai Bang The number of expatriates increased gradually and in the middle of the eighties, about 30 persons were on the Swedish forestry manning list.

In 1986 the silvicultural part of the Forestry Project formed a separate project with its own budget, the Plantation and Soil Conservation Project. This project lasted until 1991.

## The wood supply issue

In the preparation phase a defined raw material area (RMA) located in three provinces around and north of Bai Bang was allocated for the supply of wood to the mill. One main question during the feasibility studies was whether there was enough wood in this area. Vietnam was then at war and it was difficult, if not impossible, for the Swedes to visit the area. We wanted to take aerial photos to get a better picture of the forest resources and this was finally carried out. It is said that it was the old commander-in-chief Vo Nguyen Giap who after long hesitation gave his OK. It is rather fantastic that air photos could be taken during the same time as American bombs were falling over the country. That really showed how important the Project was to the Vietnamese Government.

The Project plan suggested to use a mix of planted pine as a long fiber source and and the local broadleave species *Styrax tonkinensis* as short fiber source for the supply of wood to the mill. Before the pine plantations were ready to be harvested the long fiber supply would consist of bamboo species, 70%, and the remaining 30% of *Styrax.* The latter is not a very good source for paper production, but nevertheless it was to be used by the mill up to 2010 at a gradually decreasing rate.

At the start of the Project rather large areas of *Styrax* and *Mangletia glauca* were established on state forest enterprise land. However, *Mangletia* was not liked by the paper makers due to its colored heart wood. There were also some smaller areas of *Eucalyptus* in the forests, but these trees were cut down by the local population long before the mill was in operation.

Many species of bamboo, a big grass, are used for paper production for example in India, but also at a smaller scale in Vietnam. The main species for the mill was in Vietnamese called Nua with the scientific name *Neohouzeaua dollooa*. Many bamboo species have the "bad habit" of flowering over large areas at the same time and after flowering the culms die. In the summer 1975 the Nua started to flower, so by the end of 1976 most of the Nua bamboo was dead in the area. However, before the mill was ready in 1982 new bamboo stands had grown up. Bamboo was to be an important - and in the beginning dominating - source of fiber.

## Pines – a failure

Tropical pine plantations were early one of the answers to solve the need of wood in many parts of the tropics and subtropics in the world. So, why not try pine in Vietnam too? *Pinus kesiya* is growing naturally in Vietnam and there were plantations of other pine species in the nearby Tam Dao mountain area which looked good. Thus preliminary tests with pine species started already in 1974 and they looked promising, so tests with a more scientific approach started in 1976.

As the tests of pine initially looked promising it was decided to start to plant pine on a broader scale, mainly with *Pinus caribaea hondurensis,* even before any evaluation of the trials had been performed. Two main forest nurseries were established, one close to Bai Bang and one later on at Ham Yen. A lot of smaller nurseries were also built by the forest enterprises.

However, these pine plantations were not a success due to several reasons – poor soils, grass competition, insect attacks, land conflicts, grazing by cattle etc. But pine continued to be planted at a rather large scale through the eighties. It was not easy to change the state plans. From a level of about 1 100 ha 1987 the yearly plantations of pine were phased out during the next years to come.

### *Eucalyptus* and *Acacia* – a success

Due to the poor production of the early *Eucalyptus* plantations the confidence for this species was low among both the Swedes and the Vietnamese because. There was also a wide spread opinion that *Eucalypt* species degenerate the soil and lower the ground water table. However, tests started with various provenances of *Eucalyptus* and *Acacia.* One provenance of *Eucalyptus urophylla* and one of *Acacia mangium* turned out to be most promising. Plantations of these two species were established on far better soils north and northwest of Bai Bang and they gained speed quickly.

### Plantations by private farmers

To the plantation area planted by the Forestry Project must be added areas and trees planted by the farmers with seedlings supplied by the "Plantation and Soil Conservation Project". During the period 1986-91 over 30 million seedlings, mainly *Eucalyptus* and *Acacia*, were distributed to villages and private farmers together with fertilizers.

The increased involvement in forestry plantations at cooperative land and later on on private farm land was to e great extent due to the liberalization of the Vietnamese society from 1986 when "Doi Moi", the Vietnamese version of the Russian Perestrojka was introduced.

As a result of "Doi Moi" the interst among the farmers of growing trees increased. This interest increased furher when the farmers got back the land they had previously owned. To day large areas of productive forests are established on private land. The earlier bare hills around Bai Bang are today green of forest trees.This fact has to a substantial part contributed to the positive wood supply situation the factory has today.

### Harvesting and transport

In 1977 JP presented a detailed plan for harvesting and transport of wood, which in reality only partly could be followed. Bamboo growing in bunches were cut by machete like knives, while single-growing bamboo and trees were cut by bow-saw and axes, which were introduced by the Swedes. 10 000 bowsaws and axes were supplied by the project. Chain-saws started to be used by the end of the Project and are commonly used today. Bamboo is still cut in the traditional way.

Different methods for offroad transport were tested. Dragging by human force and buffaloes were gradually changed to the use of forestry tractors. For long distance transport of both bamboo and logs rafting on rivers were the traditional method. The use of logtrucks increased especially for short and medium distances. An extensive net of both tractor-roads and truck-roads were built.

During the course of the project an extensive machine park was built up. For the maintenance of the equipment large workshops together with sparepart stores were established. The investment in machinery and spareparts constituted a substantial part of the project budget.

**Social conditions among the forestry workers**

The productivity among the forestry workers was very low. The bamboo cutters, mainly women, worked only 150 day per year and three hours per day. The Swedes were concerned about the low productivity and wanted to solve it in the Swedish way – through training, better tools, better pay and better living conditions. The Vietnamese said OK to training and to tools, but the other issues were not to be any business of the Swedes! The Vietnamese classical solution was to transfer more people from the lowlands to the forest areas.

The issue of forced labour or not in the forest areas together with very bad social conditions among the forestry workers was brought forward 1982. This led to the much discussed study carried out by Birgergård/Larsson, were they in a knowledgeable way described the situation and came up with some suggestions of how it could be improved.Due partly to project support but mainly to the liberalization of the economy through Doi Moi the situation among the population, and thus also amomg the forestry workers, has gradually improved over the years.

**Total cost and mill production today**

The total cost for the Bai Bang Project amounted to about 2.7 billion SEK, a "somewhat" higher figure than the original estimate of 770 million SEK! The total cost for the Forestry Project was about 360 million SEK, compared to the original budget of 97 million SEK. These figures are witout adjustment for inflation. It must also be kept in mind that that during the course of the Project several so called "side projects" were set up, for example a transport project, a vocational school, a housing area and "social welfare" programmes. Bai Bang Project was in fact the biggest training projet Sweden has supported. The Swedish support to the Bai Bang Project ended in 1990.

During the period 1975 - 1991 totally about 85 000 ha of plantations were established of which around 50% was *Styrax*. Later *Acacia* became the main species. This does not mean that the real area under plantation was of the same size. A conservative estimate is that in 1991 there were about 25 000 ha of industrial plantations established. Today (2014) the forest land controlled by the mill is 44 300 ha, of which 27 500 ha are plantations run by 16 companies in four Provinces. The yearly planting area for the mill´s Forestry Department decreased from 4 000 ha/year in 2008 to 2 000 ha/year in 2012, mainly due to lack of suitable land. Of this 95% of the area was planted with *Acacia mangium.*

In 2012 the wood delivery to the mill was 225 000 tons/year, of which 178 000 tons were *Acacia mangium* and 47 000 tons *Eucalyptus urophylla.* Of this 65 % came from the mill´s Forestry Department and the remaining part from other state forest companies and local farmers. In 2012 the mill produced 63 000 tons of pulp and 96 000 tons of paper. The difference between these two figures makes up of imported pine pulp, mainly from Indonesia, and clay.

**It can be concluded, that the during the 1970s and 1980s much criticized Bai Bang Project, turned out to be one of the most successful Swedish-supported development projects ever.**

Eucalypt plantation in Southern China (Photo Anders Malmer)

## Development in some Vietnamese villages around Bai Bang

*By Bo Ohlsson, consultant and researcher in Vietnam intermittent 1984 - 2014*

*Since 1984, I have had the privilege of following the development in some villages in Northern Vietnam, located some 30-90 km north of Bai Bang, where the Pulp- and Paper Mill was build in the 1970´s with support from Sweden. This small chapter is based upon personal observations over some 30 years, sometimes supported by research![1]*

### Situation in the villages before 1980

The old man arrived here in the beginning of 1960s. "We cleared the land for a State livestock farm. There were lots of wild animals and natural forest. There were also minorities in this area". He and his family came from the Red River Delta and was a relocated former soldier. Having beaten the French at Dien Bien Phu in 1954, he like many others started a new life in the small mountains along the Red River, in line with the policy of the then North Vietnamese Government. Gradually, the natural forest was depleted, and more Kinh people from the Delta arrived. They lived parallel to the ethnic minorities. Part of the policies was that the Kinh people should "civilise" the ethnic minorities by their mere presence. The Kinh people from the lowland and the indigenous people, the "ethnic minorities", lived in separate villages and apart from each other.

Gradually, increased population and increased activities in the forest resulted in changes in the landscape. The natural forest gave way to eventually degraded hills. Bai Bang Pulp and Paper Mill, the Project, which started in the 1970´s, needed natural forests, mainly bamboo, and forest plantations for raw material supply. The wood supply to the Project was in the beginning driven and managed by the Government through State Forest Enterprises, SFEs, and through cooperatives. SFE recruited Kinh people as forest workers, organizing them into Forest Brigades.

Roads were build, which increased access to the forest. There was competition for land, with forestry authorities trying to claim monopoly to the land, actually used by minority farmers for grazing and for shifting cultivation and for whom the land was essential for their survival. The Kinh people also started shifting cultivation, although they were not really professional shifting cultivators. Land became sparse, and this resulted in more intensive use of shifting cultivation land and increased degradation of the hills. There was no legislation to address this situation. The landscape eventually turned into denuded hills, suspect to soil degradation.

People, both Kinhs and the ethnic minorities, were extremely poor. The living standard of the villagers was dependent upon state subsidies. Marginal agricultural land, more suitable as forest land, was essential to them for cultivation of manioc, shifting cultivation, grazing and collection of Zang Zang, a fern, used for fuel. In late 1980s there was still an extreme general poverty in this area. There was no malaria medicine, shortage of consumer goods and shortage of rice for 5-6 months annually was not uncommon.

[1] Part of the above, including the Chart, is based upon research, conducted together with Dr Mats Sandewall, SLU, Kajsa Sandewall and Vietnamese collegaues. Articles out of this can be found in Ambio and the International Forestry Review, amongst others.

But basic services for the forest workers, living in the Forest Brigades – schools, including boarding schools for forest workers children, clinics with no equipment nor medicine but competent staff with experiences from the war, day care centres – all was there, but only just. The forest workers had a lot of State support: paid leave including transport to their place of origin during TET, the Vietnamese New Year festival, pension schemes, a credit scheme for building their houses etc. Virtually everything was there, but the amounts were dismal small.

The paddy-rice fields had been collectivized earlier, and the productivity was very low for a number or reasons, such as lack of appropriate inputs, which the collective organisations did not manage to supply, and lack of high yielding varieties. During this period, approximately before late 1980s, "illegal" paddy-fields outside the collective paddy-fields, were developed by farmers with initiative, generally with the tacit acceptance of the authorities. Our research[2] found that these "illegal" paddy-fields were not included in the Land Allocation Reform during 1980s, when land was rather equally distributed among farmers. There was also a brisk trade in the black and grey market, related to the subsidised system.

Until sometimes during mid 1980´s, the landscape experienced increased deforestation and land degradation. Limited private business was not allowed, but tacitly accepted. Supply of food was based upon rationing and food shortage was common; some villagers and Forest Brigades claimed having no rice for 4-7 months a year. The indigenous population of the villages, the ethnic minorities, were not involved in activities related to Bai Bang. "We were not told anything, and just looked at the activities. The only advantage we had was the forest roads, which opened up access to land for shifting cultivation" said one local farmer.

Development of paddy fields was essential for the forest workers. "Rice is the basis for everything we have here in this house". "Illegal" paddy fields were developed as mentioned above. Another important part of the local economy was the raising of pigs. This probably had ecological consequences. Manioc (kassava) was cultivated on the slopes. To cook it, available trees and other organic materials from the mountains were used. Thus the fuel wood cooked the manioc, which was given to the pigs as their main food. The faeces from the pigs was mixed with straw, and used as fertilizer in the paddy fields. Thus, the fertility of the hills was brought down to the paddy fields.

**From the 1980´s and the Doi Moi Reforms 1986**

During the period of 1977 up to 1980s, Bai Bang started to expand and its impact was felt by the people around, very much in terms of land use conflicts. Traditional grazing land was occupied by forest plantations. The forestry sector insisted on monopolizing the land for forestry, whilst the farmers felt that traditional right had been infringed upon. It was a period of land use anarchy, with little guidance from the authorities regarding land use. There were also economic positive impacts in terms of work opportunities, but as most of the workers were taken from the low land Delta, the indigenous ethnic minorities were

[2] See for instance *2010 Sandewall, M., Ohlsson, B. Sandewall, R.K. and Le Sy Vie. The Expansion of Farm-Based Plantation Forestry in Vietnam, Ambio, Volume 39, Number 8, pages 567-579.*

left outside. A major benefit from the Project was the training provided – in mechanics, in slviculture, tree nursery building etc.

Then came the economic reform Doi Moi in 1986. The period 1986 up to c:a 2000 was a transition period with the Doi Moi slowly being introduced, and for instance changes in policies regarding the role of the cooperatives, which virtually disappeared. Paddy fields and forest land was eventually allocated to individual families in terms of usufruct rights, and slowly, the villagers, both those working in the Forest Brigades and also the ethnic minority villagers, started to realize that the Doi Moi would affect them. The villagers were very quick to adjust to the Doi Moi and the free market. "We have been dealing with the market all the time-before it was called black and that´s how we survived. Now, we can continue but it is now official policy" a wood tradesman explained.

**Development of the family based forest plantations**

Within the forest sector, work started in the late 1980´s to reform the sector. During the period from 1990 to the Forest Law of 2006, some 200 different Decrees on forestry were issued – probably as a search process for an appropriate forest policy and legislation in a very dynamic environment. A number of policy initiatives were taken by the Government.

Simultaneously, at village level, the new Forest Land Allocation Reform started to reach the villages. Villagers were given the opportunities to receive usufruct certificates for forest land under certain conditions. The implementation varied from village to village; some took a pioneering role, whilst some waited to see the outcome of the forest land allocation. Documentation was initially an improvised piece of paper, indicating the allocation of the land concerned. Initially, it appears that those families with information and resources applied for forest land usufruct, and thus started early. The middle and poorer families came after. Eventually, the poorest families joined, and usually they received marginal and often more "remote" forest land, as the best sites already had been picked up. Many people never received any forest land at all or felt that they could not use this opportunity.

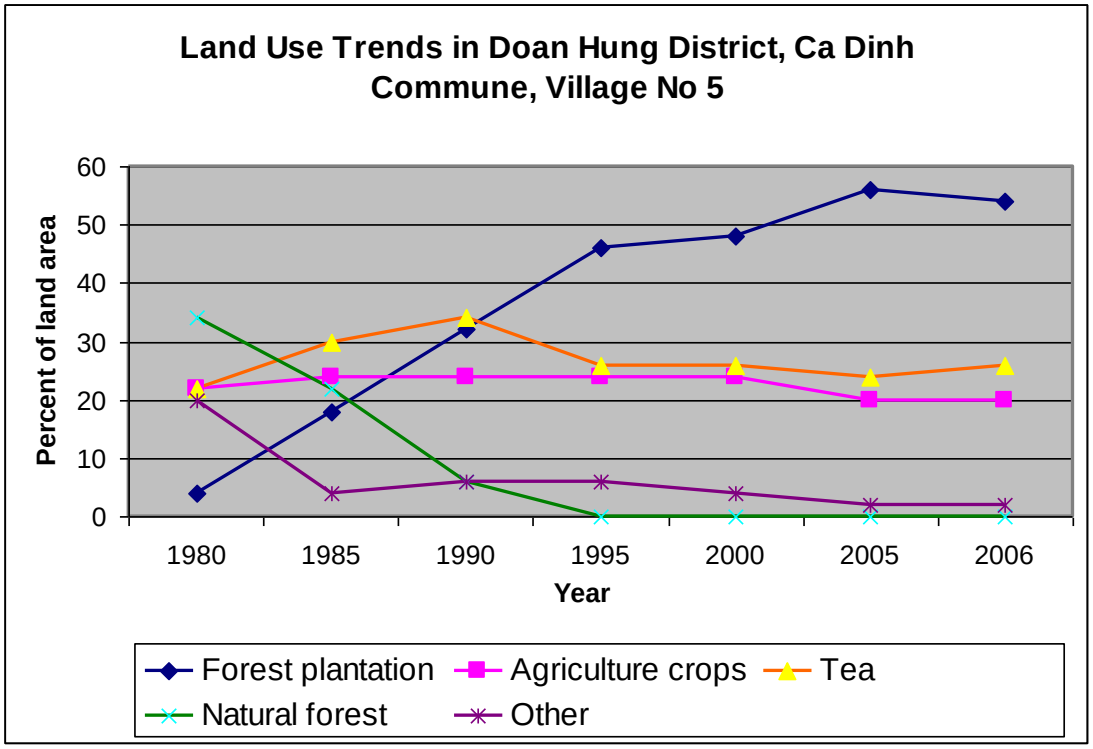
News reached the villagers that there would be a market for pulpwood at the Bai Bang mill. Many farmers then started forest plantations as a cash crop. Initial species used at Bai Bang were *Styrax tonkinensis*, an indigenous tree, and *Bamboo* varieties. After many years of experimentations the Project found that *Eucalyptus urophylla* and *Acacia mangium* were the best growing species. The Project also encouraged and helped farmers to plant trees.

The more well off people with more land, sometimes up to 50 ha, planted those areas with monocultures of a few species. The less well off, of which many only had around 0.2 to 0.5 ha of land, often planted the trees together with tea, tapioca/manioc, corn, vegetables or other agriculture crops in an agroforestry system. This probably contributes to the mosaic type of vegetation, with a mixture of very small plantations with agroforestry and the plantations with monoculture which you see today. The farmers were quite aware of market trends and adjusted the species in the plantations accordingly. In the two villages investigated, some 40-50 % of the villagers today have forest plantations.

The Chart on next page shows the land use trends in one village some 20 km north of Bai Bang for a period of some 35 years. Around 1980, some 35 % of the village area comprised of natural forest, which in 1995 was virtually nil. During the same period,

plantation forestry went from some 3 % cover to 47% in 1995 and eventually planned off at some 55 % coverage in 2006.

Agriculture crops and tea during that time has areawise decreased marginally. High yielding rice varieties were introduced so the production has increased considerably. For one of the Districts, the forest cover went from 20 to 40 % in a period of 20 years, which all is attributed the development of family based forest plantations.




Source: 2010 Sandewall, M., Ohlsson, B. Sandewall, R.K. and Le Sy Vie. The Expansion of Farm-Based Plantation Forestry in Vietnam, Ambio, Volume 39, Number 8, pages 567-579.

**Development of the tree market**

Data from a few villages need to be confirmed by some other source: the Bai Bang mill around year 2006, used some 300,000 tonnes of wood per annum. 50 % comes from individual farm families with private usufruct rights to their land; the balance, 50%, mainly comes from former employees cum farmers of the SFEs, which have contract on land owned by the State Forest Enterprises, essentially giving them usufruct rights to the forest land over a 50–90 year period. The farm gate price is about 50 % of mill gate price. Middlemen buy the wood from the farmers, transport it to the Mill and sell it there. It is likely that the forest farmers are in similar positions as Swedish family forest owners were in the 1930´s: Many small units selling to a few consumers. To protect the interests of those small farm units, Forest Owners Associations might be formed in Vietnam just like they emerged in Sweden in the 1930s.

The forest land, usufruct rights, is being traded - sold and bought. There are trends that wealthier farmers and also outside entrepreneurs buy land (usufruct rights). It has been observed that many poorer farmers find it difficult to manage their tree plantations, and

choose to sell off their forest land. “I cannot take care of the plantation – too far from my house, the soil is poor and I do not have the labour”, was not an uncommon reflection from poorer farmers. Another village observed that “Ha Noi people come here and buy forest plantations”.

Bai Bang is not the only customer for the farmers. The mining industry also buys wood from the farmers, and Vietnam exports wood chips to Japan. Actually, the management of Bai Bang indicates that the supply of wood is problematic. A new pulpmill, located outside Quang Tri, a Province further north of Bai Bang, contributes to the felt shortage of raw material. The management in principle agreed to a proposal from a visiting Swedish forest owner: “Raise the pulpwood price, and you will get wood!”- but was of course reluctant to do so.

Rice is nowadays also an export commodity in Vietnam. “My daughter work in Kuala Lumpur” informed one farm family. This reflects not only the diversified economy, but also the globalisation now also penetrating the villages. In one village, most of the men were seasonal migratory workers, often to construction work in Ha Noi or in Ho Chi Minh City, leaving the women alone to cater for the farm.

Life for the villagers has certainly changed – from extreme poverty to a relative wellbeing. Most villagers seem to have prospered from this, and there is actually an impression of shared prosperity. However, there are also likely to be losers, who have not been able to take advantage of the dynamic situation. There is certainly a challenge to look more into this, not the least as the Vietnamese experience in a global context initially was an unique experience and a success story.

**Decreasing shifting cultivation**

An interesting trend in this change of land use is the decrease in shifting cultivation. This could be attributed to a lot of changes, which have been discussed in scientific articles (access to the market, work options, diversified economy, increases in paddy yield to name a few). One aspect, not discussed so far, is what the younger generation in the villages are telling us: “We are not interested in remaining in the uplands, eating sticky rice and live like our forefathers”. As I understand it, they want to live in roadside, urban areas, wear jeans, listen to pop music, drive Hondas and join the modern world! The new high yielding rice variety is actually called Honda Rice – because if you used it, you could afford buying a Honda Motorbike. I would venture to say that in 25 years, shifting cultivation will disappear in the areas affected by Bai Bang!

For those of us who worked in Vietnam before 1990´s, a most striking ocular experience is the change in the landscape. See the picture above. The former barren hills are covered with a mosaic of plantations in varying shapes and composition. Certainly, this development is worth reflecting about, both in the context of the living standards of those concerned, but also in a global context. There are indications that the most dynamic part of the global forest sector today is actually the family/farm based forest plantations – plantations in a small scale on a large scale!

*Pictures of a slope near a village 1978 and 2014*
*Left photo: Sture Karlsson* *Right photo: Bo Ohlsson*

**Conclusions**

Much remains to be researched and contemplated about the rather spectacular development in the Provinces affected by Bai Bang. But there are also other areas in Vietnam which have undergone the same transformation of the landscape through family based forest plantations. A few tentative conclusions and reflections here could certainly be further developed.

These new possibilities, to sell wood and rice to a market and get cash income, have meant a very dramatic economic and socioeconomic development in the provinces affected by Bai Bang. Income from selling wood now amounts to 10-25 % of the farmers´ income, sometimes more. Some of the increased incomes are used for investments. I have seen villages convert from bamboo huts to concrete houses with tiled roof instead of thatched roofs in a few years. In most cases, the funds have come from harvesting of their forest plantation. Income from 1 ha seems to be adequate for the building of a concrete house.

Another very positive effect of this changed land use is that the former barren, unproductive hills in the area now are covered with vegetation and productive, useful trees. We have also found that the average farm based forest plantation is small, below one ha, and this, in combination with poor farmers apparently choosing agroforestry and wealthier farmer go for monoculture, has generated a mosaic landscape with a lot of small holdings with different management regimes. This is probably good for the environment, although we have not looked closer into this.

Many factors have contributed to the apparent success of this family based plantation forestry. The most important factor is probably the Doi Moi Reform, where the State started to allow farmers to have rights to a piece of land and protects the farmers´ investments. The development of a free market is another important factor. Not only a market for wood, but also for rice, so that the farmers can be able to buy rice at any time of the year, and not have to grow rice on marginal land.

The Bai Bang Project is another factor which has meant a lot. The farmers learnt how to plant trees and the Project created a market for their wood and offered many work opportunities and a lot of training and education. The Bai Bang Project is probably the most "successful" of all SIDA supported projects ever.

It is likely that if the farmers would get organized into something similar to a Forest Owner Association, they would be able to get a better pay for their produce. So far, this development has not yet taken place. "Ideas about cooperatives are difficult to

discuss, as our experiences are not good from those cooperatives we once had", as many farmers indicate.

Finally, important factors are the farmers themselves, who interpreted the situation and responded with vigour and created the new landscape! Given appropriate polices and legislation, this is not surprising - planting of trees is not alien to them.

Highly populated mosaic landscape with high tree density in Java, Indonesia (Photo Anders Malmer)

# Evaluation of Swedish development support to Vietnam

*Summary of parts of the evaluation made by GHD, Australian consultant company, in 2012, compiled by Sten Norén.*

## Introduction

Sweden has given development assistance to Vietnam from 1967 to 2012, a period of 45 years. During that period Sweden has, through SIDA/Sida provided around 11 000 MSEK, corresponding to 23 000 MSEK in 2008 prices. Of this around 4 500 MSEK has gone to the Forestry Sector of which half to the Bai Bang Pulp and Paper Mill. *(The last figure is an incomplete summary of the expenditure of the cooperation projects in the Forestry Sector in Appendix E in GHD:s evaluation (See Annex 1). Probably it is in running costs and might be compared with the figure 11 000 MSEK above. Rate: 1 USD=6.5 SEK /SN)*

In 2007 the Swedish Government decided to end the development cooperation with Vietnam (as well as with Laos and Sri Lanka) in order to reduce the number of countries with which Sweden has development cooperation. In the case of Vietnam probably also the good development in the country influenced the decision. Then Sida decided to thoroughly evaluate the aid to these three countries. An historical account was made by a Nordic consultant group during 2009-10. In 2010, via an international competitive bidding process, Sida awarded a contract to the Australian consultant company GHD (Gerhald Haskins & Geoffrey Daviey) to undertake an evaluation study of the long-term development cooperation between Sweden and these three countries.

The overall purpose of the evaluation was to provide an historical account and a summary of experiences and lessons learnt from the cooperation. Of course the evaluation team could not study all projects in the cooperation. The team looked closer at a number of cases, of which three, nr 2, nr 4 and nr 5 are relevant for the Forestry Sector. The primary question to be answered by the evaluation was: *How, and to what extent did Swedish development cooperation contribute to poverty reduction in Vietnam?* The study on Vietnam was published in a booklet*: Sida Evaluation 2012:2 "Evaluation study of Long-Term development Co-operation between Vietnam and Sweden".* Below is a short summary of parts of that booklet reasonably relevant for the Forestry Sector made by Sten Norén.

## Vietnam after the end of the War 1975

At the end of the French colonial period in 1954 Vietnam found itself with two distinct economies delineated geographically. In the North, wealthy in natural resources, dominant activities included: extractive industries, shipbuilding, plantation agriculture, railroads, roads, and hydraulic works. The South was dominated by the agricultural sector, which focused mainly on rice and rubber cultivation.

The second Indo-China War (Vietnam War, American War) from 1954 to 1975 had an enormous economic and human impact on both the North-Vietnames and the South-Vietnamese economies. As a result of aerial bombings from 1965 onwards all 6 industrial cities, 28 out of 30 provincial towns, all power stations, 1 600 hydraulic works, 6 railway lines, all roads and sea and inland ports in the North were seriously damaged or destroyed. In addition 400 000 cattle were killed and thousands of km2 of farmland were

damaged. In the South 100 000 km2 of farmland and 50 000 km2 of forestland were damaged and 1.5 million cattle killed. In Vietnam as a whole it is estimated that there were up to 1.5 million civilian and military deaths, 360 000 people made invalids, 1 000 000 people widowed and 800 000 children orphaned as a result of the war. By early 1980s 1 000 000 people had migrated out of Vietnam following the end of the war in 1975.

In 1976 the newly unified Vietnam in its 5-yearplan put the economy towards socialism with emphasis on industrial development and a shift in the South from private enterprise to social command system including collectivisation of agriculture. Some forms of private activities were however allowed especially in the South.

**Doi Moi reforms in 1986**

During the early 1980s Vietnam suffered from poor economic growth, agricultural productivity was low, food shortages were common and 75 % of the population was living in income poverty. The country was heavily dependent on aid from the Sovjet Union and was strongly influenced by the Sovjet central planning model. The impact of central planning was stronger in the North than in the South, where the private sector, although illegal, was not so suppressed.

In order not to loose its legitimacy the Vietnamese Communist Party (VPC) in 1986 embarked on a series of market-oriented economic reforms, the so called *Doi Moi* reforms. While the reform process was driven and controlled by VPC the demand for reform emanated from the will of the people. In the first phase it included abolition of agricultural collectives, a central Treasury, autonomy of state owned enterprises, removal of price control, end of Government monopoly of foreign trade and encouragement of private business and foreign investments. In 1989-90 it was followed by removal of price controls in agriculture, further liberalisation of foreign trade, streamlining of the public sector, tax reforms, protection for private property rights and a land reform allowing farmers and others to lease land for 49 years. The latter became very important for the Bai Bang factory as it now could be safe for farmers to plant trees on suitable land and later sell the harvest to the factory.

*Doi Moi* is widely regarded as one of the most successful economic reforms ever implemented in a developing country. The growth of Gross Domestic Product (GDP) increased steadily from 1986 reaching a peak of 9.5% in 1995 and continued to grow at an annual rate of 7 % in average. In 1994 USA lifted its embargo on Vietnam and development aid and foreign investments poured into the country, the latter particularly after 2005. In 2009 Vietnam achieved World Bank *Middle Income Country* status. However, increasing corruption and raising inflation soon became a concern.

The Human Development Index (HDI), which combines life expectancy, adult literacy, gross school enrolment and purchasing power parity GDP into a single score, has increased every year from 1970. People living below the extreme income poverty line of USD 1.25/day was reduced from 64% in 1993 to 21% in 2006. Income inequality is low by world standards. Vietnam is widely considered to be one of the top performing developing countries and is likely to maintain high rates of economic growth in the foreseeable future.

**Swedish development cooperation with Vietnam**

The Swedish relations with Vietnam has had a special political touch since the rather general public and political opposition against USA for the War in Vietnam in Sweden. Swedish development support started in the early 1970s when the War was still going on. The main projects then were the construction of Bai Bang Pulp and Paper Mill and two hospitals.

During the period 1986 to 1999 Sweden, as the biggest western donor (1980-89 Sweden provided 64 % of total bilateral aid to Vietnam) and with a special very positive relationship with the Government of Vietnam in many ways, supported the politically sensitive *Doi Moi*.

In the early 2000s began a shift in the Swedish aid towards a focus on public administration reforms, democratic governance and poverty alleviation. This was in line with the Policy for Global Development (PGD) which the Swedish Government adopted in 2003. The number of Sida-activities within a number of fields increased with a peak of 346 in 2004. In 2007 Sweden decided to scale down the support to Vietnam by 2011 and alter it to a Partner-Driven Cooperation (PDC) launched in 2009. The focalpoint for Swedens PDR in Vietnam are: environment, climate change, health, research and trade or business.

**Bai Bang and the side-projects** (Case study 2)

Although the idea behind the project to construct an integrated pulp and paper mill is simple, the implementation proved more complicated due to the difficulties of cooperation between two countries with such different political and economic systems. These difficulties led to a conciderably adverse media coverage in Sweden, much of which focused on various controversies, such as living conditions of workers, forced labour in the forestry component and frequent delays and increase of funds needed. The original budget estimated 1973 was 770 MSEK, while the final cost became 2 800 MSEK, in 1996 prices 6 500 MSEK.

The uncertainty of the availability of enough wood to the factory led to a limitation of the capacity to 50 000 tonnes of pulp instead of 100 000 tonnes, as the Vietnamese side wanted. It also led to the establishment of an extensive forestry programme in the surrounding provinces of Yen Bai, Tuyen Quang, Vinh Puh, Lao Cai and Ha Giang and a number of other side-projects (See Annex 1). The forestry component of the Bai Bang Project was eventually separated into the Plantation and Soil Conservation Programme (PSCP), which commenced in 1986. Initial work concentrated on silviculture, harvesting and transport aspects.

However, when PSCP was to be continued in 1989 SIDA´s thinking on support to the Forestry Sector had evolved further. SIDA stated that a continuation of PSCP should be based on a wider concept including both social forestry activities and industrial plantations. The planning of a new forestry programme would take into account the experiences of another project implemented in the same areas as PSCP, namely the Forest Trees and People Project (FTP Project). This was a cooperative initiative between SIDA and FAO and was a continuation of the FAO/SIDA programme Forestry for Local Community Development (FLCD) which commenced in late 1970s. FLCD/FTP put the emphasis on social aspects of tree planting and agriculture and on local people´s active participation. This new concept was accompanied by an international trend of discrediting of industrial approaches to forestry.

**From FCP to MRDP** (Case Study 4)

After an extensive planning phase, in which the Vietnamese authorities were said to have an unusually high degree of active participation, the Vietnam-Sweden Forestry Cooperation Programme (FCP) began in 1991. It included 7 diverse projects:

- Soil conservation
- Agroforestry
- Forest machinery
- Forestry research
- Forestry training
- Support to the Ministry of Foestry
- Land management

The programme was designed to be implemented through a process approach, whereby detailed activities were decided upon during implementation rather than being predetermined (blueprint approach). FCP continued geographically in the same 5 northern provinces as PSCP.

FCP marked the first large scale attempt to introduce Participatory Rural Appraisal (PRA) methods as a part of an effort to enshrine participatory principles at the heart of implementation. Many of the organisations established, such as Village Management Groups and Village Extension Groups, became focal points for development activities in their specific area. The programme introduces a range of models that later became integral parts of other SIDA-funded initiatives.

In 1994 discussions began between SIDA and the Ministry of Agriculture and Rural Development (MARD) on the next phase of FCP, which had been widely considered a success. FCP had evolved considerably by this time, a product of the process approach applied during implementation. SIDA had handed over considerable control of the design of the new project to MARD. Howecer, the draft design product attracted considerable criticism from a consultant team engaged by SIDA to appraise the document. The team noted that the programme document made no substantive reference to experiences of FCP. It recommended the new programme to begin in a small scale, focused on methods development, scaling up at a later point. However, in the end it appears that SIDA and MARD did not alter the original design document.

Implementation of the new programme – called Mountain Rural Development Programme (MRDP) – began in 1996. The extent to which it represented an evolution from FCP has been much debated. Some said that MRDP was the first time PRA methods had been applied to a broader set of rural development concern rather than forestry. The 2001 Evaluation by Sida disagreed, stating that there is little new in substance in the design of MRDP, except, perhaps, in gender and reorientation from massive re-plantation. Nevertheless, the seeds sawn in the MRDP process were crucial to the subsequent emergence of the Chia Se Poverty Alleviation Programme.

**Chia Se Poverty Alleviation Programme** (Case Study 5)

Planning for the Chia Se Poverty Alleviation Programme started early 2001 between Sida and MARD, but the Ministry of Planning and Investment (MPI) was also involved. In the end MPI got the responsibility for implementation of the Programme, which started late 2003. Chia Se was highly progressive in its orientation with participation and democracy

as key themes. It was a politically sensitive programme and few other donors could have succeeded in introducing such a programme in Vietnam.

Geographically Chia Se continued Sida´s long association with the 5 northern mountain provinces, focusing on Ha Giang and Yen Bai, while also working in Quang Tri in central Vietnam. Operationally two mechanisms were central to Chia Se approach:

1) Local Development Funds (LDF) were set up in each of the three provinces to channel funds to districts, communes and villages in accordance with locally agreed plans and priorities, such as the repair of an irrigation scheme, construction of a basic access road or the refurbishment of a school building.

2) Local Planning and Management for Development (LPMD) – a system of decentralised and integrated planning in the relevant local administration.

The unique combination of participatory methods, transparency and decentralised approach to collective decision making has made Chia Se very successful and give promise for lasting impact. It has managed to "vietnamise" western ideas of democracy in an intensely practical sense. It is interesting to note that this success emanated from the social forestry ideas of FCP, FTP and FLCD, which Sweden had bee quite instrumental in developing with FAO.

**Conclusions of the Evaluation**

1. Sweden has responded well to the important multidimensional development needs in Vietnam.

2. There is mixed evidence of effective and efficient delivery of Swedish aid to Vietnam. It was less effective in the beginning due to capacity shortages in Vietnam and difference in political systems, but it improved considerably in later years.

3. There is clear evidence that Swedish aid had nurtured an environment in Vietnam that assisted in providing the pre-conditions for sustained poverty reduction, particularly the support for *Doi Moi.*

4. There are four lessons to be learned from Swedish aid to Vietnam.

    1. It is important to develop a good relationship between the donor and the recipient
    2. Adapt a long term approach
    3. Pursue an effective balance between principles and pragmatism
    4. Be flexible and open to new ideas.

The overall conclusion by the Evaluation is that "**The Swedish development cooperation with Vietnam has had a strong poverty reducing impact in the country and has improved the health, education and overall human development levels of millions of Vietnamese citizens".**

However, what the evaluation team does not mentions in their report is the poverty reducing effect of the fact that farmers, as a result of *Doi Moi* and delivery of know-how

by Sweden, now can plant trees on their long-leased land and deliver wood to a growing number of wood factories, not only to Bai Bang, and thereby earn money. At the same time the trees improve the environment and the carbonsinking capacity of the soils. The former bare, undproductive hills are now covered with trees. Nor does the evaluation mentions the important and long-term education and training effects Bai Bang and many other projects have had for the Vietnamese people.

**Annex 1:** List of Forestry and Rural Development Programmes in Vietnam supported by Sweden 1974 - 2009

# Annex 1

**List of Forestry and Rural Development Programmes in Vietnam supported by Sweden 1974 – 2009**

This list is a modified extract of the forestry-related projects in Appendix E in the "Evaluation Study of Long-Term Development Co-operation between Vietnam and Sweden" made by the Australian consultant company GHD in 2012. It is incomplete on expenditure figures and a bit confusing compared to other information, but anyhow it gives a reasonable overview of the magnitude of projects the support included. It can be assumed that expenditure figures are given in running costs and thus not really comparable or possible to summarize.

| ***Projects*** | ***Years*** | ***Cost MSEK*** |
|---|---|---|
| **Forestry** | | |
| *Bai Bang projects* | | |
| Bai Bang, mill + forestry | 1974 - 1995 | 2 800 (In 1996 prices: 6 500) |
| Bai Bang, mill + forestry | 1985 - 1990 | 575 |
| Vocational school | 1984 - 1987 | ? |
| Vocational school | 1987 - 1992 | 20 |
| Housing area | 1984 - 1990 | 31 |
| Transport project | 1984 - 1990 | 63 |
| Plantation and Soil Conservation Project (PSCP) | 1986 - 1990 | 40 |
| Plantation and Soil Conservation Project (prolongation) | 1990 - 1991 | 37 |
| Cogido & Cogivina | 1985 - 1990 | 101 |
| Thu Doc I | 1985 – 1986 | 37 |
| Thu Doc II | 1986 – 1990 | 45 |
| *Other projects:* | | |
| Forests, Trees and People (with FAO) | 1986 – 1989 | ? |
| Forestry Sector Review (with FAO) | 1989 – 1992 | ? |
| Living Conditions Programme | 1990 – 1992 | 5 |
| Renovation of Strategies for Forestry Development | 1993 – 1996 | 8 |
| Vietnam – Sweden Forestry Sector Support Programme (FCP) | 1991 – 1995 | 140 |
| Mountain Rural development Programme (MRDP) | 1996 – 2002 | 158 |
| MARD – Sida Cooperation Programme (MSCP) | 2005 - 2008 | 40 |
| *Environment and Natural Resources Management* | | |
| IFAD, Tuyen Quang RIDP *(Agric, Forestry, Environment)* | 2002 – 2003 | 15 |
| The Chia Se, Vietnam–Sweden Poverty Alleviation Programme *(Agric, Forestry, Environment)* | 2003 – 2009 | 310 |
| ***Total Swedish expenditure, Forestry and Rural Development*** | ***1974 – 2009*** | ***4 425*** |

Nine year old Acacia mangium plantation in Sabah, Malaysia (Photo Anders Malmer)

# Swedish support to the Forestry Sector in Laos

*By Calle Mossberg, Team Leader for Swedforest/Scandiaconsult/Ramboll/NIRAS in Laos 1989-2012.*

## Introduction

Sweden's development assistance to Lao Peoples Democratic Republic (PDR) went on from 1975 to 2012, 38 years. During that period Sweden through SIDA/ Sida contributed around 4 600 million Swedish Crowns (MSEK, in constant 2008 prices, rate 1 USD = 6.50 SEK). During the period 1976 – 2008 Sweden was the second largest donor providing 15% of all bilateral aid and 9 % of all aid. Out of this an amount of almost 700 MSEK was used for the Forestry Sector development support.

Lao PDR in 1975 and in 2012 is not the same country, dramatic changes have taken place at a speed which is difficult to imagine. There are no signs that the speed of change will slow down during this decade.

Below is an effort to capture how Lao PDR has developed with focus on forestry from 1975 onwards and how the role of SIDA/Sida-support to the Forestry Sector has influenced that development. The Forestry Sector covers in this connection forests for production, protection and conservation but also the rural development linked to the use of the mosaic of agriculture/forestry land in remote areas.

## Entry points for the Swedish support to Lao PDR

The Vietnam- war and the FNL-movement are well known in Sweden, not least because of *Prime Minister Olof Palme* and his engagement to support Vietnam against the efforts of USA to keep control over the region as part of the ongoing cold war with the Soviet block. This included the commitment from the Swedish Government for support to the reconstruction of Lao PDR after the defeat of USA-loyal groups in Vietnam and Lao PDR in 1975.

The Forestry Sector was selected as one of the target areas of support from Sweden, as it was foreseen that timber products from selected forest-rich areas would be important for the economic reconstruction and development. The Road Sector was also an early target for support from Sweden. The infrastructure was judged as important both for the facilitation of general development as well as for transportation of valuable products including hardwood logs from forest areas. A number of Swedish visits to explore how to get the support started and running began already from 1975 with *Reidar Persson* from SIDA as the pioneer for the forestry sector.

## Support to two State Forest Enterprises.

After preparatory discussions between Lao PDR and Sweden project support commenced in 1977. SIDA assigned implementation of the forestry sector development to the Swedish consulting company Silviconsult. Later on the responsibility was transferred to another Swedish company, Silvi Nova.

The first efforts were focused on helping two State Forest Enterprises (SFE 1, Muang Mai and SFE 3, Tha Bok) to open up logging areas through feeder roads

development, logging and also to start sawn timber production. Linked to this on the job training of staff and labour were important parts including support to the Forestry Training Centre in Muang Mai.

As basis for the logging, forest management plans were prepared, for which inventory data were collected. All these activities were undertaken in areas where pro-USA guerillas still were active, with incidents unavoidable.

**Widened support to the Forestry Sector**

The cooperation on Forestry was from 1984 expanded through forming of the Lao-Swedish Forestry Programmes (LSFP) (LSFP phase 1, 1984-1988, and LSFP phase 2, 1988-1991). They included silviculture, forestry research and various forestry related human resources development components. A forestry research stations set up, before the war supported by Australia, was revitalized. A number of Lao Government staff and students were sent to India for academic education – this to break the pattern of the Lao Government to send all staff to Soviet block countries for education. India was at that time one of the few other acceptable countries for exposure of Lao citizens for training and education. A special project aiming at producer gas production was set up in the Province of Borikhamxay with support from an individual Swedish consultant, (*Bertil Sandberg*).

**The First National Conference on Forestry in 1989.**

Parallel to ongoing support from Sweden to forestry development, the highest authority, the First President of Lao PDR, realized the increasing risks with deforestation and degradation of forest resources. He therefore in 1989 called all concerned Government staff from national and local levels to "the First National Forestry Conference", where he in strong words made all aware of risks with deforestation and even declared that 70% of Lao PDR land area has to be covered by forests. The "70% forest cover goal" has, because of the status of the President, since then been "untouchable" in renewed forestry sector strategies.

At that time about 50% of the Lao PDR had forest cover with the forest cover definition used (crown cover of minimum 25%), down from about 70% during the 1940s. Considerable forest areas had e.g. got lost during the bombardments and defoliation attacks on forested areas during the Vietnam war. Not least the so called Ho Chi Minh Trail from North to South Vietnam through Lao PDR was heavily bombed by American airplanes.

**Tropical Forestry Action Programme (TFAP)**

The National Forest Conference became the entry point for broad international efforts to support the management of forest resources in Lao PDR. The TFAP was an international model for national planning of the Forestry Sectors and donor coordination in a country, innovated by a group of international foresters at FAO in mid 1980s.

Lao PDR decided in 1989 to apply the TFAP model. TFAP-Lao was administratively managed by UNDP, implemented by FAO and supported by SIDA, World Bank(WB) and Asian Development Bank(ADB).

I was assigned the role as Chief Technical Adviser (CTA) for the TFAP-Lao process under employment of Swedforest and I was stationed at Swedforest Far East Office in Bankok, Thailand. The TFAP-Lao was a strategic planning process with 6 subprogrammes for implementation as result, but also an effort to coordinate donor support to the Forestry Sector during the period 1990 – 1996. (This took place far ahead the days of the Paris Declaration of 2005, in which the donor community agreed that ownership and coordination of aid should rest with the reciepent.)

Several donors including Sweden, Finland, Germany, Japan, WB, ADB, FAO and some NGOs identified areas for support linked to the 6 TFAP sub-programmes and the Department of Forestry was filled up with experts from donors or assigned consulting companies. Annually during the period 1990 – 1996, donor coordination meetings were arranged where information was shared and discussed under the leadership of the Department of Forestry.

**Decentralization of decision making for local development**

Integrated into the TFAP- process, the LSFP moved into its 3rd phase in 1991 – 96 and with new overall goals. Now the Programme became more focused on capacity development (human resources development, organizational development and institutional development) including strengthened Lao ownership and support to decentralized decision making in the Lao structure – from national to district level. The decentralization was by the Lao Government declared as principle for development and LSFP 3 was aligned with this principle. Monitoring of the status of forests through inventories and reconnaissance surveys had still continued high priority and the forestry research was also continuing to be the a target for support. The responsibility to provide support to LSFP 3 was from 1991 onwards held by Swedforest.

**Accelerated forest degradation**

Contradictory to the expectations of the President of Lao PDR and in spite of the support from many donors, it was obvious that the forest conditions were continuing to detoriate. The fast improving infrastructure, now with support from several donors including Sweden, made it possible to extract logs from earlier inaccessible areas and the improving law and order situation also reduced the risks for forestry operations to be disrupted by enimies to the Lao PDR.

The Government preferred to blame the continued degradation of forest areas on the now fast growing rural population and their shifting cultivation systems. In reality more of the blame should be with the loggers, who either had been awarded concessions by some governmental authority or who anyhow logged forest areas. For instance the Ministry of Defense and various Districts/Provinces claimed that they had these rights over and above what the Department of Forestry could permit and control.

**Switch of focus of Sida-support from forests to people in LSFP 4.**

With the more and more stabilizing law and order situation in Lao PDR during the 1990s, the door was open for Sida to move its support programmes closer to farmers and villagers.

During the last phase of LSFP ( phase 4, 1996 – 2002) the Programme therefore had as a priortity ambition to develop and test models for Participatory Village Development and Sustainable Land Use systems and for Participatory Management of National Biodiversity Conservation Areas (in cooperation with IUCN).

The support also included Forest Inventories and Provincial Forest Area Management Planning and Research Support, but now with research moved out from research stations to include farm based research with villagers. Apart from the more technical oriented support, Capacity Development covering Human Resources Development and Organizational and Institutional Development of the Forestry Department and its links on local level had continued high priority including cross cutting issues such as Gender and Monitoring & Evaluation. LSFP 4 aimed through the models developped to upgrade the awareness and knowledge of national and local government staff, as well as villagers, on the importance of protection and management of forestry areas as well as the agriculture/ /forestry mosaic areas, which dominate the Lao landscape in rural areas. A sustained use of land, based on commitements from Government staff on all levels as well as by communities, would lead to improved conditions of forests.

It is interesting to note the drastic change in 20 years of support from Sweden to Department of Forestry 1977 – 2002. The starting point was logging for economic development through State Forest Enterprises and it ended with focus on participatory models for use of land and forests.

**Consolidation of results**

The LSFP 4 came to an end in 2002. Results were consolidated and a solid series of documents (51 Nos.) reflecting results and recommendations were produced. Actually still today, the reports (in Lao and English language) are in demand, even if "catchwords' for development support to the sector have changed. Now for instancea climate change vocabulary has been set and has become entrypoint for support/development from many donors. The final documentation of LSFP is including technical reports, manuals and checklists, which are as applicable today as they were 10 years back. In reality "sustainable forest management is still sustainable forest management".

However, by 2002 the forest cover was down to 41%, and earlier major homogeneous forest areas were now split up and the quality of major parts of remaining forests were further degraded. By now (2013) the forest cover is very likely around 35%. Thus the Swedish support to Lao PDR did not managed to change the "standard pattern" for economic development of countries, where exploitation of forest resources is one of the cornerstones (as it was also in Sweden 1880 – 1920).

**Changed support from Sida**

From 2002 onwards the Sida's support to the Forestry Sector was reformulated to cover the following:

- Lao-Swedish Upland Agriculture and Forestry Research Programme (LSUAFRP) through the National Agriculture and Forestry Research Institute (NAFRI) Phase 1. 2002-2007

- Upland Research and Capacity Development Programme (URDP), also through NAFRI. Phase 2. 2007-2012

- Forestry Sector coordination issues within the Department of Forestry. In cooperation with Japan. It consisted of three parts:

  - Forest Strategy 2020 (FS 2020) 2001-2002
  - National Forest Sector Strategy 2002-2004
  - Forest Strategy 2020 Implementation Promotion Project (FSIP) 2006-2010

I was CTA during the last 7 years of LSFP 4 (1996-2002) as well as during the 10 years of Sida-support to Research and Capacity Development of NAFRI (2002-2012). My employer was during these years changed as Swedforest in 1996 was taken over by Scandiaconsult and in 2002 by the Danish consultant company Ramboll. Swedforest in a way continued to live under the names Scandiaconsult Natura and Ramboll Natura. The next change took place 2012, when Ramboll Natura was taken over by the Nordic consultant company NIRAS and now the name is accordingly NIRAS Natura. From 1st January 2013 my full time assignment with NIRAS Natura ended but I continue to take on shortterm assignments for them as well as for other organizations.

**The debate on shifting cultivation**

During the last 15 years debate on pros and cons with shifting cultivation as a sustainable land management system has been intense in Lao PDR. An Upland Development Workshop was organized in 2004 through initiative from the Sida supported programme at NAFRI and in cooperation with other donors, projects and non-government organizations. It was concluded during the workshop that the increasing population density in the uplands leads to too short fallow periods in some areas, which makes shifting cultivation unsustainable, and that development of models for permanent use of such areas would be the solution.

To reduce pressure on land the Lao PDR has been and is sometimes applying the radical model to resettle villages from the hilly areas to valley bottoms, where there are also better opportunities for the Government to provide education and health services. This resettlement principle has been objected by many donors including Sida. This had even as a consequence that a planned "second leg" of Sida support to Upland Development (leg 1 = research, leg 2 = use of research results for development) never was agreed upon between Lao PDR and Sweden (2003).

As a valuable spin off effect of the workshop 2004, to which about 200 people attended, a Source Book describing means and ways for sustainable use of the uplands as well as a Non Timber Forest Products Handbook were produced (in English and Lao languages). Both these documents are still widely used by projects and education institutions.

**Research for Development (R4D)**

The Sida support to NAFRI 2002 -2012 included a component labeled *Research for Development* ("R4D"). R4D has flexible interaction between farmers' local government

staff and researchers as the basis, and is different from "scientific research", where researchers control all steps in research to be able to prove research hypothesis etc. The R4D was centered around how to develop farming systems, with the intention to stimulate sustainable use of land and to provide alternatives to what the large scale private investors aim at - i.e. large scale monocultures of rubber trees, fast growing tree species, sugar cane, cassava, maize - to mention the most important. Obviously agroforestry concepts were important themes for R4D.

R4D was undertaken in four of the northern provinces and it is interesting to note that different models were prioritized by different villages, depending on varied physical preconditions such as climate, soil etc, but also depending on availability of infrastructure, markets and on traditions and social structures in the villages.

**Fast Economic Development**

When I arrived in Laos 1989, it was striking to see the genuine poorness all over the country not least in rural areas, where even severly suffering people were obvious. The mode of transportation in Vientiane 1989 was bicycle – now, 2013, traffic-jams are normal during office/school opening and office/school closing hours. In rural areas even bicicles were rare when I arrived but today motorbikes are a common means of transportation.

The economic development has meant that Lao people with good personal connections and with knowledge of how to do business, have become rich. In Vientiane this is demonstrated by the fast increasing number of luxury villas and vehicles, often with fancy registration numbers such as 1111, 2222 etc. The Government itself has often prioritized development of often impressive office complex using funds generated from development and/or with support from neighbour countries.

Very well off people can however now be found all over Laos and as signs of this housings at village levels has often changed from simple huts to often concrete house with tin-roofing and even modern villas. In the rural areas good infrastructure is now making most areas accessible, electricity has reached a major number of villages, almost all villages have access to international TV channels and a majority of Lao people have their own mobile phones, which can be connected all over the country.

On the other hand the poorest people, often belonging to minorities, have not been able to take the opportunities to gain better lives, sometimes the contrary. They are often now landless and dependent on daily rates work, as investors, often from abroad, are granted concessions for development.

From 2005 onwards a new dramatic change in development assistance has also taken place. Traditional donors from Western Countries are replaced by investors from neighbour countries, including China and Vietnam, in use and exploitation of land and natural resources. Donors including Sweden and Denmark have left; others are staying on but are less dominating, as Lao PDR has new development partners who have much more funds available to invest than the "traditional" donors have. The new partners are often fast in decisionmaking, whereas traditional donors are burdened by more complicated and timeconsuming decisionmaking processes (to the frustration of Lao staff). Also, the new partners are often not so concerned about sustainability factors.

## Centralized decentralization

Generally the Government of Lao PDR has not been pleased with the results of efforts in agriculture, forestry and rural development through the Ministry of Agriculture and Forestry, and therefore a new Ministry of Natural Resources and Environment was created in 2010. A quite recently upgraded National Committee for Rural Development and Poverty Eradication, presently placed under the Prime Minister's office, has now been given the lead role for rural development (2011). It is pushing ahead with reallocation of villages in rural areas to create small towns and the use of stabilized agriculture rather than rotating agriculture. The roles of technical ministries from all sectors of development are to support the Committee-driven initiatives.

Probably as a warning signal to people and organizations aiming to promote other options for locally driven development concepts, a prominent leader for these kinds of initiatives disappeared in mid December 2012. This is now by local people wanting to take initiatives in sustainable development through interestgroups and associations interpreted as a signal to be careful.

On the other hand since 2011 the door is formally open for the creation of non-profit associations, farmer groups, farmers' associations and farmers' cooperatives.

## Swedish private forestry sector investments in Laos

The Swedish-Lao company Silvi Nova/Burapha Agroforestry, led by the Swedish forester *Peter Fogde,* has since early 1990s invested in forestry plantations development and in processing of wood at a sawmill and a furniture factory near the capital city Vientiane. The focus has been on planting and processing fastgrowing tree species such as Eucalyptus and Acacias. During 2011-12 Burapha Agroforestry accelerated its plantation programme where all seedlings now are produced in its own modern nursery. By end of the planting season 2013 the company now has around 1,500 ha of plantations, but the future ambitions are far beyond this size.

Since 2007 the Swedish-Finnish Forest Company Stora-Enso, guided by Burapha Agroforestry, is testing out concepts for the establishment of fastgrowing tree plantations based on the principles of agro-forestry.The ultimate goal is to produce raw material for a pulp factory in China through a 30,000 ha plantation area. The distance in between lines of trees in plantations is as wide as 9 meters to allow local communities to use land in between tree rows for agriculture purposes (normally in a plantation trees are planted much more densely). The speed of expansion of plantation areas is so far slow. By end of the planting season 2013 the total area under plantation was around 1,000 ha. Both Burapha and Stora Enso are struggling in negotiation with the Government to get access to suffienct and suitable land. A ban on establishment of new concessions for Eucalyptus plantations up to end 2015 is also a bottleneck.

## The future for Forestry in Lao PDR

The present 5-year plan for the Agriculture and Forestry Sector Development (2011 – 2015) is to a great extent based on expected private investments from abroad. So the role of "traditional donors" is now more to defend the roles of rural communities and their more traditional sustainable livelihood systems, while the Government is pushing a more

liberal economic development based on largescale investments with the goal to bring Lao PDR out of the group of poorest countries by 2020.

Swedish bilateral support came to a final end early 2012 and is now changed to support to regional projects in South-East Asia. It is still to be seen if/how Sweden can continue to promote sustainable development of the Forestry Sector in Laos through this regional approach.

In spite of efforts in support from Sweden and other donors to develop a functional legal frame work for forestry, to develop management models and to support education of many Lao staff, the detoriation of forest resources have not come to an end as yet. Sustainable use of forests remains to be achieved.

Major reasons for lack of sustainable forest development so far are:

- lack of law enforcement
- low salaries of government staff
- inflow of buyers of logs and timber products from neighbour countries
- lack of quality eduction with analytical skills in focus

The limited flow of information on what is happening (newspapers, radio, TV) is also a reason, where wrongdoers do not need to expose themselves to risks of being known. However, Lao PDR is rich in incomegenerating resources including rivers suitable for hydropower development, deposits of various high value metals including gold, copper and iron and with neighbours with purchasing power. Therefore there are good chances that the low-density populated Lao PDR over time can stabilize land use and achieve what Sweden achieved during the period 1920 – 1950 in terms of first halting forest destruction and then improving forest conditions. Law enforcement and salary levels will improve, quality of education will improve and rural people will leave rural areas for better living opportunities in townships.

These in combination could lead to reduced pressure on forest land and resources, which also without active management gradually will recover. Over time there will be valuable forest areas available for sustainable use and for protection of the environment and the biodiversity in line with the ambitions of the First President of Lao PDR.

**Concluding words about the Swedish support to the Forestry Sector in Lao PDR.**

Swedish support to the sector has been appreciated, even if it has been difficult for staff assigned to work in Sida-supported projects to convince decisionmakers on the highest level about which action ought to be taken. The Swedish style of support has been based on respect for Lao counterparts, where listening and dialogue have been important features. Comparing with other donors, I would place Sweden as number one on these grounds.

In terms of achievements of the goals of the support, much knowledge has been created with Swedish inputs which are available for use. One of my Lao counterparts once told me "*Don't push me to implementation of what we have developed and produced (through Sida- support) – when time is ripe this knowledge and ideas will be applied*".

I think this summarizes the situation. The Government is monitoring and judging what they think is right to do and when. It reflects on ideas and solutions proposed e.g. through Sida-support and from other donors and actors in development,

where today the influence from neighbour countries is very strong and where economic development is prioritized.

**General conclusions on Swedish support to Lao PDR**

In 2007 the Swedish Government decided to end the development cooperation with Lao PDR (as well as with Vietnam and Sri Lanka) in order to reduce the number of countries with which Sweden has development cooperation. Then Sida decided to thoroughly evaluate the support to these three countries. The task was through a bidding process awarded to the Australian consultant company GHD (Gerald Haskins & Geoffrey Daviey). The result was published in the booklet Sida Evaluation 2012:3: "Evaluation Study of Long-Term Development Co-operation between Laos and Sweden".

The evaluation team did not evaluate the support to the Forestry Sector as a whole. But they made a case study on a Forestry Inventory Sub-Project, which was one of six subprojects under LFSP3, 1991 – 96. They found that the Sub-Project had been well implemented and for instance had highlighted the loss of forests between 1982 and 1989. However, the Sub-Project had not managed to any great extent to influence the Lao Government to improve and formulate policies, plans and strategies for the Forestry Sector.

The general conclusions of the Evaluation of Swedish support to Lao PDR were:

1. *Swedish development cooperation has responded to pressing multidimensional development needs in Lao PDR.*

2. *There is mixed evidence of effective and efficient delivery of aid, low during the first years mainly due to limited absorbtion capacity of Lao PDR and lack of harmonization among donors. This improved later.*

3. *The Swedish aid has nurtured an enabling environment for poverty reduction in LaoPDR.*

4. *Lessons learned to improve future development effectiveness.*

- *Adapt a long-term approach and have a frank and open dialogue with the partner.*
- *Pursue an effective balance between principles and pragmatism.*
- *Be flexible and learn while doing*

**The final overall conclusion of the Evaluation was that Swedish development cooperation has made sustansive contribution to poverty reduction in Lao PDR.**

**Annex 1:** List of Forestry Projects in Lao PDR supported by Sweden 1977–2012 from GHD:s evaluation.

# Annex 1

**List of Forestry Projects in Laos supported by Sweden 1977–2012 from GHD:s evaluation**

The list is a modified extract from Appendix E in the "Evaluation Study of Long-Term Development Co-operation between Laos and Sweden" made by the Australian company GHD in 2012. It is a bit confusing on some points compared to other information, and therefore to some extent adjusted when more reliable information has been on hand. It has been assumed that expenditure figures are given in running costs and thus not really comparable or possible to summarize. Anyhow, the Annex gives a reasonable overview over the projects included in the support, of which all are not mentioned in the text.

| ***Projects*** | ***Years*** | ***Cost MSEK*** |
|---|---|---|
| 1. State Forestry Enterprise, SFE 3 (Tha Bok) | 1977 – 1985 | 45,0 |
| 2. State Forestry Enterprise, SFE 1(Muong Mai) | 1979 – 1987 | 90,0 |
| 3. Muong Mai Training Centre | 1979 – 1984 | 10,0 |
| 4. Ministry of Industries, Handicraft and Forestry | 1984 – 1986 | 28,5 |
| 5. Muong Paksane Regional Project (Producer gas production) | 1984 – 1986 | 1,6 |
| 6. Lao-Swedish Forestry Programme, LSFP 1 | 1984 – 1988 | 10,0 |
| 7. Lao-Swedish Forestry Programme, LSFP 2 | 1988 – 1991 | 40,0 |
| 8. Lao-Swedish Forestry Programme, LSFP 3 | 1991 – 1996 | 120,0 |
| 9. Lao-Swedish Forestry Programme, LSFP 4 | 1996 – 2002 | 152,9 |
| 10. Programme Support to National Coordination Assistance and Investment in the Ministry of Agriculture and Forestry (with UNDP) | 1997 – 1999 | ? |
| 11. Lao-Swedish Upland Agriculture and Forestry Research Programme (LSUAFRP) through National Agriculture and Forestry Research Institute (NAFRI), Phase 1. | 2002 – 2007 | 77,0 |
| 12. Upland Research and Capacity Development Programme (URDP) also through NAFRI, Phase 2 | 2007 – 2012 | 88,0 |
| 13. Forestry Sector Coordination and Strategy development 3 parts (In cooperation with Japan) | 2001 – 2010 | 14,7 |
| **Total Swedish expenditure on Forestry in Laos** | **1977 – 2012** | **> 677,7** |

# Joint Forest Management in Laos

*By Rolf Gilliusson, Forest Management Advisor for Swedforets in Laos 1991-94*

## Background

A pre-condition for sustainable forest management is that the forest can be protected. In most development countries, including Laos, the natural forest belongs to the Government, which generally has limited means to protect it. With increasing pressure on the forest from loggers, shifting cultivators and surrounding villagers in general this tends to develop into an open access situation leading to forest degradation and deforestation.

In the 1990s there was a growing opinion believing that the solution was to be found in a partnership between the Government and the villages surrounding the forest in which the villagers get a substantial share of the benefits from the management in exchange for their commitment to protect the forest. The concept originated from India in the 1970s and was called Joint Forest Management (JFM).

Sweden had through SIDA/Sida since the 1980s supported the National Office of Forest Inventory and Planning (NOFIP) in Laos to develop a modern system for national forest inventory. Through this system it was learnt that the forest cover in Laos had declined from 70 % in the 1940s to 50 % in the 1980s, when the forest area was 11 million ha, of which 2.5 million ha were set aside as Protected Areas. There was only about 1 million ha of dense natural high forest left on land suitable for logging, called State Production Forests. These valuable forests were under heavy pressure from loggers and shifting cultivators and should be brought under sustainable forest management as soon as possible.

A pilot project on JFM was started in the Lao-Swedish Forestry Program (LSFP phase 3) in 1992 and was placed under NOFIP in Vientiane. The Swedish support included a forest management adviser (Rolf Gilliusson) at the beginning and an agriculture/forestry academicien (Bérénice Muraille) during the second half of the project, both provided by the consulting company ISO/Swedforest International.

## Selection of Pilot Area

The 1 million ha of dense natural high forest was spread all over the country with the main part in the central and southern Laos. The total area was demarcated into 51 State Production Forests (SPF). The JFM project started by developing a model for sustainable forest managemnt of the SPFs and selected Dong Kapho SPF in the middle of Savannakhet Province as pilot area.

Dong Kapho had a gross area of 9,600 ha. It was divided by Road No. 9 into Dong Kapho North and Dong Kapho South. The forest was surrounded by 15 villages with a total population of 5,000 people. See the map below. Dong Kapho North was managed by State Forest Enterprise No. 2 and Dong Kapho South by Savannakhet Province. The State Forest Enterprise No.2 had logged 52,000 m3 from 1988 to 1991 in Dong Kapho North. The strategy was to log over Dong Kapho in a few years and then let it recover during 30 – 40 years. That would not be sustainable logging as the protection of the forest could not be secured during the recovery period. Fortunately, due to a national logging ban in 1991, all logging was stopped in the area while waiting for sustainable forest management plans to be made.

The villages surrounding Dong Kapho were very poor. They were far from self-sufficient in rice production. For them the Dong Kapho natural high forest was a very important complementary source of food and income. There were conflicts of interests between the Government and the villagers about the use of the forest. With increasing population and the present uncontrolled use of the forest, Dong Kapho would gradually be impoverished and loose its economic and environmental values.

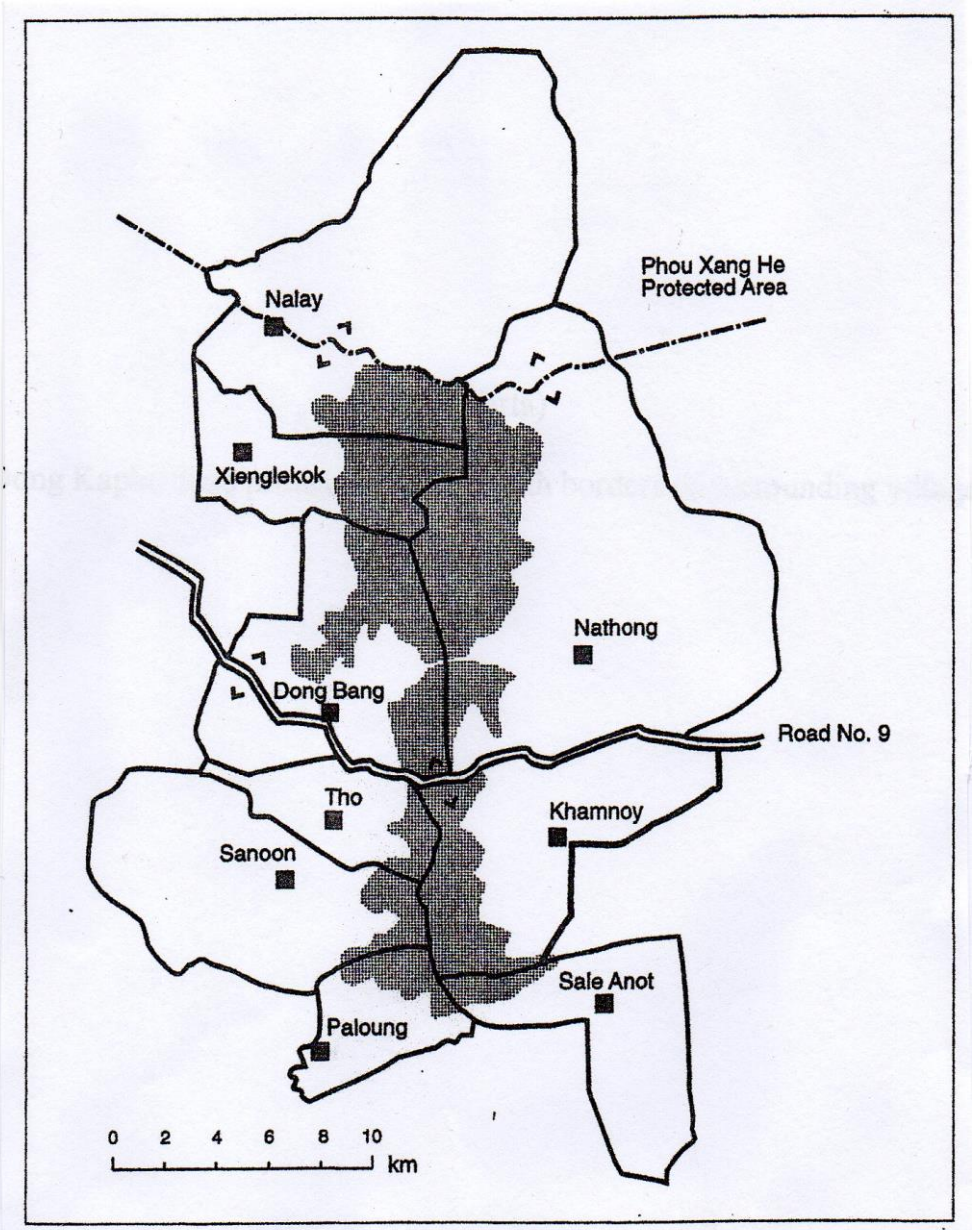



*Figure 1. Dong Kapho state production forest with borders of surrounding villages.*

**A model for Sustainable Forest Management**

The project started in 1992 by developping a model for sustainable management of the State Production Forests. A short-term consultant (*Dr. Wan Razali*) from the Forest Research Institute of Maslaysia (FRIM) was hired to help in the development of the model with Dong Kapho as an example.

The management of Dong Kapho should have the following three objectives:

1. Sustained-yield production of valuable timber and non-timber products;
2. Maintenance of the ecological, conservation and protective capacity of the forest;
3. Involvement of the surrounding villagers in the management and sharing the benefits with them to ensure effective protection of the forest;

NOFIP carried out a forest inventory of Dong Kapho in 1993 and divided the production forest into compartments. The production forest proved to be 7,900 ha, i.e. 83 % of the total forest area. The average stocking in the production forest was 125 m3/ha with a total of 115 species of which 44 were commercial. The most important commercial species for timber production were *Diptero-carpus alatus* and *Hopea.* Dipterocarpus was also an important tree for resin tapping by the local people, which was a source of conflict between the Government and the people. The annual growth rate of the commercial tree species was only 0,5 m3/ha/year.

Dong Kapho is not far from the Ho Chi Minh Trail, which was heavily bombed during the Vietnam War in 1966-72. Many unexploded bombs were found during the forest inventory, but NOFIP had included local people in the inventory team and they knew very well the location of the bombs and there were no accidents.

Sustained-yield production means that the harvesting should not exceed the growth rate of the harvested species. For the whole Dong Kapho the total annual growth rate of commercial timber was about 4,000 m3 based on the figures above (7,900 x 0,5). As earlier mentioned, State Forest Enterprise No. 2 had an annual logging quota of 17,000 m3 in Dong Kapho North alone in 1992, which is very far from sustained-yield harvesting.

*Dr. Razali* designed a growth-yield model for this type of production forest allowing logging at a felling cycle of 50 years, which the Project adopted. The model was based on an average growth rate of commercial timber of 0,5 m3/ha/year, i.e. an average logging yield of 50 x 0,5 = 25 m3/ha in the felling cycle with selective cutting of the biggest/oldest trees and natural forest regeneration in the cutting glades with natural succession of the species. It was possible to control the tree species distribution in the model. A minimum of 45 healthy commercial trees per ha should be left in the residual stand after logging to ensure the production of minimum 25 m3/ha in the next felling cycle.

In the JFM model, the province and district forestry organizations in cooperation with NOFIP should produce forestry maps, carry out inventory of the State Production Forests, demarcate forest compartments and work out sustainable long-term and short-term logging plans including selection and marking of the trees to be felled in the annual plans. The first Forest Management Plan for sustainable management of Dong Kapho according to the new JFM model was made by the Project in 1993 and was approved by the Department of Forestry in August 1994.

**Involvement of the local people**

The new thing with JFM was to involve the local people living around the State Production Forests and give them benefits in exchange for their commitment to protect the forest from illegal encroachment and fires. It was a lot of discussions at the beginning of the project on how much benefits and responsibilities should be given to the surrounding villagers. In the Forest Management Plan 1993 for Dong Kapho it was

suggested that two varieties of the JFM model should be tested, one with very high village involvement (JFM Model 1) and another variety with less village involvement (JFM Model 2).

The village Nathong in Dong Kapho North was selected as pilot village for test of JFM Model 1 during a five-year period (1995 - 2000). The village, which had a population of 890 people, should manage 2,800 ha of Dong Kapho North, of which 2,200 ha were production forest. A contract was signed by Savannakhet Province, Phin District and a newly formed Nathong Joint Forest Management Association in 1994 regarding the organization and implementation of JFM Model 1.

The Nathong JFM Association consisted of one man and one woman from each family in the village and was led by a Management Team of 9 persons of which 3 should be women. The village should protect the part of Dong Kapho located inside the traditional village border and implement the new forest management plan in this area including annual logging and sales of timber. The role of the Province and the District was to support and control the village. The villagers were given introductory workshops and training by the Province and District forestry organisations.

The economy of JFM was important for the motivation of the villagers to undertake the forest protection and management responsibilities. In Model 1 the income from logging by Nathong village was initially based on the following figures:

| | |
|---|---|
| Logging volume/year: | 600 m3 in year 1 and 700 m3/year in year 2 – 5 |
| Log sales price: | Average USD 100/m3 |
| JFM tax to the Government: | 35 % of the log sales price (average USD 35/m3) |

The villagers in Nathong had earlier experiences of logging in Dong Kapho as sub-contractors. They used 2-man handsaws when felling the trees and transported the logs by old self-loading winch trucks from the forest to the landing. This method was a rather ”soft” method for logging compared with the use of modern big machines. The Village JFM Association could now sell the logs to outsiders or further process the logs to sawntimber or other forestry products for sale or own use.

Based on the above figures, the annual gross income for Nathong village from logging in Dong Kapho would be in the order of USD 39,000 – 46 000 depending on the annual logging volume. This would be a substantial support to the economy of the village. About 70% of the JFM net profit was planned to be used by the village for common village development, the remaining 30 % to be paid directly in equal amounts to all families in the village.

However, it was later clarified that the Village JFM Association should not only pay JFM tax for the logging but also government royalties for the logs and field allowance to the government staff when they worked with the village. Still the villagers appreciated the profit from the JFM project as an important input to the living and development of the village, and outsiders could see the Nathong village start ”blossom”. JFM Model 2 was also tested in villages in Dong Kapho, first in 2 villages, later from 1998 to 2000 in all remaining 14 villages (except Nathong). In this model the Provincial Forestry Organisation kept the full responsibility for the management of the Dong Kapho forest including sales of timber but hired the surrounding villagers on an annual basis to protect the forest. The original idea was to pay the village an annual protection fee. An alternative concept was to give the villagers paid job opportunities for carrying out logging, enrichment planting, maintenance of forest roads etc. in Dong Kapho as a kind of compensation for their protection commitment.

**The first annual coupe by Nathong Village in 1995**

After training of a number of villagers in basic logging and forest management in January – February 1995 Nathong village started logging the first annual coupe. They mobilized 100 villagers to fell and debranch 100 trees (600 m3) using axes and two-man hand saws in two weeks. This is a quite impressive achievement considering that the average tree was DBH 84 cm and had a bole volume of 6 m3.

Three self-loading winch trucks were hired to transport the logs to Road No. 9. The Nathong JFM Association signed a contract with a local sawmill to sell all the logs at an average price of USD 123/m3. Next year the Association would consider retaining some of the logs in the village for processing and sales of processed timber on its own. The Association had also organized the protection of "their" part of Dong Kapho, and a group of women had established a nursery in the village for raising seedlings for enrichment planting in Dong Kapho.

**The economy of Sustainable Forest Management**

This rather ambitious management model with aerial photos, inventory, pre-logging survey, tree marking, protection, training of villagers etc. will certainly cost more than simple short-term exploitation. In the new sustainable forest management plan for Dong Kapho (1993), there was an attempt to make a cost/benefit analysis of the sustainable forest management as shown below.

***Cost-Benefit Analysis of JFM in Dong Kapho***

| USD/HectareAnnual costs | |
|---|---|
| Inventory and forest management planning | 0.5 |
| Field organization | 1.7 |
| Logging | 15.2 |
| Silviculture (enrichment planting and cutting of climbers) | 1.7 |
| Maintenance of borders and tracks | 1.0 |
| Protection fee (Model 2 above) | 5.0 |
| ***Total costs*** | ***25.1*** |
| | |
| Annual benefits | |
| Sales of logs (price level 1993) | 35.4 |
| Sawmill profit | 8.9 |
| Timber certification profit (higher price when exporting) | 7.6 |
| Collection of non-timber products (resin tapping) | 37.3 |
| Environmental benefits (stopping shifting cultivation) | 23.4 |
| ***Total benefits*** | ***112.6*** |
| | |
| **Cost/Benefit Ratio** | **1: 4.5** |

The calculation shows that sustainable management of the natural high forest in Dong Kapho would have a very favourable cost/benefit ratio. However, the successful management would depend totally on an effective protection of the forest from fire, grazing, shifting cultivation and illegal logging. Such a protection could be achieved only by strong involvement of the people living in and around the forest.

## Evaluation

A team of Lao and international consultants carried out an evaluation of the two JFM pilot models in September – November 2000. They concluded that the models were the first sustainable models for natural high forest in Laos. They found that they were technically sound and that the technical forest management plans prepared met criteria of sustainabilitty. The team examined issues of equity, benefit sharing and compatibility with government policy. They believed that the JFM Model 1 had demonstrated improved forest protection and sustainable management and had great potential to contribute to rural development and poverty alleviation in Laos. Model 1 had greater benefits than Model 2 in terms of improved forest management and village development. Model 2 may not offer adequate incentives for the villagers to collaborate.

## Development and use of the JFM model in Laos after year 2000

*Calle Mossberg*, who still (2014) is living and working in Laos, has given some information about the present situation regarding sustainable management of the State Production Forests in Laos.

Parallel to the SIDA-supported JFM model development, the Lao Government from 1995 experimented with other models for management of the State Production Forests involving villages. One of them was the Forest Management and Conservation Programme (FOMACOP), which was supported by the World Bank (WB) and Finland (FINNIDA).

While the Sida-supported JFM model recognized the Government´s ownership of the State Production Forests and pointed out the importance of developing partnership with the surrounding villages, FOMACOP aimed at giving the villages full ownership of the concerned State Production Forets, which the Government at the end could not accept. Therefore the FOMACOP model had to be modified to be more in line with the JFM model before it could be endorsed by the Government.

The small JFM project came somewhat in the background of the big FOMACOP project during the period 1995-2001, when the Sida support to the JFM project terminated. However, the JFM projct was recognized as a pioneer project on sustainable forest managemeent in Laos and was very much appreciated by the Department of Forestry in general and NOFIP in particular.

The support from WB/FINNIDA is still (2014) going on, since 2002 under the name of Sustainable Forest Management and Rural Development (SUFORD). A final phase of the programme has recently been approved and will cover the period 2013-2018. One objective of this last phase is to have all the 51 State Production Forests covered by sustainable forest management plans by the year 2015. At present (2014) 16 State Production Forests have got such plans prepared and approved.

# Social Forestry in India

*By Per Thege, FCP Coordinator for Swedforest in India 1988-1991*

## A background to Social Forestry in India

The first National Forest Policy of India was formulated in 1952. It emphasized forests as a national asset and the importance of production from the forest to meet national needs. Consolidation of the newly merged forests brought under national control from the ex-landlord and ex-ruler states, was prioritized. The importance of the Forest Department grew and in 1966, forests were included in the concurrent list, which meant that the central government increased its powers over forest lands and policy.

The National Commission on Agriculture (NCA) interim report in 1972 emphasized the dual function of forestry which includes production forestry and meeting the consumption needs of local communities. Forest lands were proposed to be classified into production, social and protection forests. Social forestry, as a concept, was first mentioned in this interim report.

The National Wasteland Development Board (NWDB) was formed in 1985 and attention of social forestry and other efforts were directed to wastelands development. Tree planting received an impetus from the large schemes funded nationally and through external funding agencies. The first social forestry projects had been started in the period just before the start up of NWDB.

The new Forest Policy in 1988 was framed by the Government of India, according to which the first claim to forests is that of forest dwellers. The importance of forests was not only for the nation but more importantly for the local communities. Orissa framed the pioneering Joint Forest Management Resolution outlining a sharing mechanism between the state and local communities based on rights and obligations. The Government of India issued a policy circular in 1990 recommending states to adopt similar resolutions for Joint Forest Management.

Changes in Government policy has affected the forest development programs undertaken since independence. It took about thirty years after independence before forests were considered a resource for local use. In the eighties there was a further shift from production to regeneration of forests, with large scale plantation programs. The nineties herald a move away from plantation and a focus on creating substitutes to natural forests for local uses to eco-restoration and increased rights of local communities over natural forests.

The SIDA-supported Social Forestry projects should be seen against this background - they were products of their time.

## Swedish assistance to the Indian forest sector

Indo-Swedish forestry cooperation started in the 60s, focused on training in logging techniques and forest surveying. In the course of the cooperation close relations had been established, in particular with various union level institutions. A new and more ambitious cooperation program was outlined in 1979. It contained further union level projects in training and institutional building but also support for social forestry projects at state level. The social forestry projects soon absorbed a major portion of financial resources.

The forestry cooperation grew from twenty million Swedish crowns in 1977/78 -1981/82 to one of SIDA's largest contributions ever with five hundred million SEK in the period 1982/83 -1988/89. The Swedish entrance as a major contributor to the social forestry program not only implied a powerful change in volume of the Swedish commitment to the forestry sector but also involvement in the most important Indian issues, namely poverty alleviation in the rural areas, environment and the function of the Indian local-political and administrative structure.

These social forestry projects formed part of a huge nationwide social forestry program planned to consist of a series of large-sca1e, long-term state level social forestry projects. The program aimed at setting up at least one large-scale social forestry project in each state, supported by the Indian authorities and by leading members of the donor community, in particular the Word Bank (IDA) and USAID. Other supporting donors included ODA, CIDA, DANIDA and SIDA.

In 1979 SIDA explored the possibilities to build up a forestry program for Swedish support in India. A consultant, *Floyd Werner,* was contracted on a long-term forestry coordination assignment to work in close cooperation with the SIDA-DCO and the Government of India, expanding the Swedish involvement in the forestry sector and preparing for new projects into a Forestry Coordination Program (FCP).

In order to strengthen the direct SIDA-involvement, and relieve the consultants of ordinary SIDA-DCO work, a special forestry program officer was added to the SIDA-office in New Delhi. This post was successively held by *Lars-Olov Lundberg, Anders Nyström* and *Per Björkman* (1990-1994).

**Monitoring rather than expansion**

A decision to change the thrust of the FCP towards project monitoring and support rather than expansion of the program came in 1983 as a result of the importance and magnitude of the social forestry projects in Tamil Nadu and Orissa. After long negotiations the social forestry cooperation became more of a field assignment. In 1983 there were three FCP-coordinators - one in Delhi and two posted with the social forestry projects in Tamil Nadu and Orissa. From 1985 there was also one coordinator in Bihar (see Annex 2).

The role of the Delhi coordinator was to lead administrative and practical support to the project level coordination and to stay in close contact with the Ministry of Environment and Forests.

The management systems successively tried out in the Indo-Swedish Cooperation Program reflects, in various ways, basic and lasting attitudes of the two parties:

1. India's resolve to avoid or minimize all use of resident foreign experts in Indian authorities and projects,

2. SIDA's attempts to cope with the persistent constraints on its administrative budget by searching for broad sectoral programs which "would automatically reach the poor without requiring too much administrative handling" in Delhi.

The consortium ISO/ Swedforest was assigned a long-term contract for managing the technical backstopping of the program and for provision of advisory services to the Indian authorities responsible for executing the program. A Social Forestry Project Support

Group was formed, which monitored the projects on a regular basis. The members are listed in Annex 2. All were not in the group during the same time.

To begin with, consultancy services were limited to the three social forestry projects that SIDA engaged in (Tamil Nadu, Orissa and Bihar). Later the area of responsibility was widened to include, in principle, all forestry projects in India supported by SIDA. An overview of the FCP-projects is found in Annex 1 and key FCP personnel are presented in Annex 2.

**Overview of the major FCP-projects** (See also Annex 1 and Annex 3)

The overall objectives of the ***Bihar Social Forestry Project*** were rehabilitation of degraded forests with people's participation and farm forestry.

The main objectives of ***Social Forestry in Tamil Nadu and Orissa***, as stated in the project documents phase I, were:

- to gradually shift the responsibility from the Forest Department to village Panchayats and Committees for establishment, maintenance, protection and harvesting of woodlots;
- to help economically weaker sections in raising plantations and to practice agroforestry on their land holdings and also on barren Government lands in order to distribute benefits;
- to establish plantations in order to meet villagers' requirements for wood (and thereby reduce pressure on natural forests) and employment generation in raising, maintaining and harvesting of plantations.

***The Forestry Sector Administrative Development Project (FSAD)*** originated from the early contacts between Prime Ministers, *Mr. Rajiv Gandhi* and *Mr. Olof Palme*. Their intention was to find ways and means by which Sweden could assist the new and ambitious Government of India to implement administrative reforms. After several consultations, the forestry sector was chosen as one of the possible cooperation areas. The aim was to expose top Indian administrators in the forestry sector (senior Indian Administrative Service (IAS)- and Indian Forestry Service (IFS)-officers) to Swedish forestry system (State forestry, cooperative forestry and private forestry). Two of the participating senior officers have played an important role in the policy making process in India in their positions as Inspector General of Forests and Additional. Secretary in the Ministry of Environment and Forests respectively.

The aim of the support to ***The Indian Institute of Forest Management (IIFM)*** was to reform the Indian forestry education and training and introduce modern participative management. The Swedish support was designed as institutional cooperation and participatory ventures between the new institute and established and well reputed foreign institutions. After a period of consultation and unsuccessful attempts to change the development pattern for IIFM, the Swedish support, which was agreed upon 1987, was withdrawn 1993. Lack of Indian leadership, needed to break away from the traditional academic pattern, was the main reason for the development. However, IIFM is today still a functioning institution, but without making the difference as it was hoped in the early discussions and planning process.

***Tree Growers' Cooperatives Project (TGCP)*** started in 1991. The project was implemented by a cooperative organization related to the National Dairy Development Board (NDDB). The long-term goal was to create economically viable and self-sustaining cooperative organizations of tree growers planting and managing trees on Government wasteland on lease. Training and institutional strengthening were essential components of the project.

***Dungarpur Integrated Wasteland Development Project*** started 1991 with close NGO involvement. The project aimed at establishing sustainable rural production systems through rehabilitation of potentially productive land. All activities were built-up through peoples close participation with the project and the involved NGOs.

**Some conclusions**

Social Forestry was defined as forestry by the people for the people. Aiding this forestry for the people was the Government, through the Forest Department. Even though the concept of social forestry and the values it embodies were not fully clear, most people agreed on that social forestry meant some amount of cooperation between two partners in development, the communities and the government, and the relationship between them determined much of the management actually in place.
One of the important effects of the projects has been to initiate a process of change in the relation between the local communities and the Forest Departments. This change has been brought about by the Forest Department´s changing attitudes, mainly by learning while doing. Local communities have also changed attitude towards the Forest Department which could be seen through the creation of for example informal Forest Protection Committees.The role of field activities must be seen in this light and the results must include not only the actual physical achievements but also the effects in terms of attitudinal change of the two actors. The process of attitudinal change was slow at all levels and required trust and two-way communication at all levels, Government to Government; Government to Community and Community to Individual.

There is no one right solution, only healthy attitudes and good will working towards a community defined and understood results and vision. If a common understanding is not established at the outset of a cooperation program it should be recognized by the parties and its establishment and be regarded as an objective in itself. It seems to me that a common real understanding of the results and vision of the projects was not established at the outset of the Forestry Cooperation Program. Development takes time and even more so if the partners, from time to time, are moving in different directions.

**Phasing out of the FCP**

As can be understood from the conclusions above it gradually became more and more difficult for SIDA and the Indian Government to agree on goals and means for the various projects. In Bihar there were limited positive results, and in Tamil Nadu profits from the plantations were not reinvested into new plantations.

There were similar problems in Orissa. Instead India wanted more development assistance from SIDA. The degree of people´s participation was not either very high, partly due to the fact that the villages were not allowed to sell harvested timber themselves on the market but had to do it through the Forest Authorities.

With a more market oriented economy during the 1990s India developed very quickly and it was soon felt that the country does not need much bilateral assistance with all conditions that this implies. When the country tested a nuclear bomb, Sweden decided to end all bilateral aid to India. The whole FCP was phased out around 1996.

**Annex 1.** Forestry Coordination Program Projects

**Annex 2.** Key Personnel of FCP

**Annex 3.** Swedish contribution to Social Forestry in India
( From IRDCurrents nr 9, 1995)

**Annex 1**

***Forestry Coordination Program Projects***

| **Start year** | **Project** | **Project period** | **Contribution in million SEK** |
|---|---|---|---|
| 1981 | Social Forestry Tamil Nadu1 | 1981-1986 | 195 |
| 1983 | Social Forestry Orissa 1 | 1983-1988 | 135 |
| 1983 | Agro-Forestry/ /Silvipisciculture WestBengal | 1983-1988 | 15 |
| 1983 | Forest Survey of India Phase1 | 1983 | 0,9 |
| 1985 | Social Forestry Bihar 1 | 1986-1991 | 68 |
| 1987 | Social Forestry Tamil Nadu | 1986-1988 | 80 |
| 1987 | Forest Sector Administrative Development Project (FSAD) | 1987-1992 | |
| 1987 | Indian Institute of Forest Management (IIFM) | 1987-1993 | |
| 1988 | Social Forestry Tamil Nadu2 | 1988-1993 | 150 |
| 1988 | Social Forestry Orissa 2 | 1988-1993 | 153 |
| 1988 | Tree Growers' Cooperative Project | 1991-1996 | 50 |
| 1989 | Social Forestry Bihar 2 | 1989-1992 | 46 |
| 1993 | Social Forestry Tamil Nadu, interim phase | 1993-1994 | 6 |
| 1994 | Social Forstry Tamil Nadu, consolidation and phasing out | 1994-1996 | 40 |
| 1993 | Social Forestry Orissa , prolongation/interim | 1993-1994 | |
| 1994 | Social Forestry Orissa, identification-phasing out | 1994-1996 | 77+15 |
| | | **Total mSEK** | **1 031 + +** |

**Annex 2**

***Key Personnel of FCP***

| **Personnel** | **Time of Assignment** |
|---|---|
| **FCP Coordinators** | |
| Floyd Werner | 1981-84 |
| C-G Mossberg | 1984-88 |
| Per Thege | 1988-91 |
| Gabors Bruszt (Senior Programme Advisor) | 1987-89 |
| Ulf Öhman | 1991-93 |
| Mats Blakstad | 1993-95 |
| Peder Nilsson | 1994-96 |
| **Orissa FCP Coordinator** | |
| Gordon Tamm | 1984-85 |
| Hans Egneus | 1985-88 |
| Anders Dahlqvist | 1988-89 |
| Lars-Erik Ekstrand | |
| Stefan Jonsson | |
| Associated expert: Karin Östberg | |
| Assistents: Neera & Kundan Singh, Ajay Rai | |
| **Bihar FCP Coordinator** | |
| Margareta Edgren | 1985-88 |
| Pär Färdmo | 1988-91 |
| **Tamil Nadu FCP Coordinator** | |
| Håkan Wahlqvist | 1984-85 |
| Tor Skaarud | 1986-89 |
| Åke Nilsson | 1990-92 |
| Peder Nilsson | 1992-94 |
| Associated expert: Pål Karlsson | |
| Assistant: Sanjay Shukla | |
| **SF Project Support Group** | |
| Gabor Bruszt, Tamil Nadu | |
| David Palin, Orissa | |
| Anders Forsse, Orissa | |
| Jerker Thunberg, Orissa | |
| Floyd Werner, Bihar | |
| Per Thege, Bihar | |
| Erland von Hofsten | |
| Marit Werner | |
| Christer Wallroth | |
| Stefan Jonsson | |

Annex 3
Swedish contribution to Social Forestry in India



IRDCurrents
nr 9, 1995

# Swedish contribution to Social Forestry in India

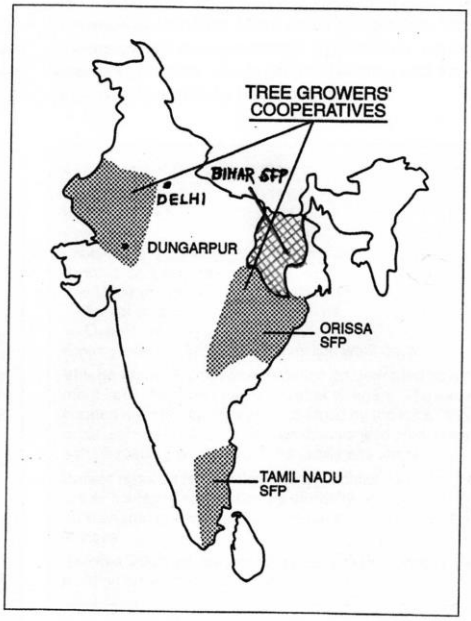
**by Swedforest in India**

***Swedish assistance to social forestry in India is mainly directed at projects in the states of Tamil Nadu and Orissa. The purpose of the projects is to create sustainable forestry resources for supply of fuelwood, fodder and small timber for benefit of the poor. Project activities include distribution of seedlings to small land-holders to be planted in their own land, improvement in quality of seedlings, and research and development.***

Social forestry implies active participation of the local community in planning and implementation of the projects, as well as in sharing the benefits. There are special efforts to ensure that also the poor can influence project operations and have access to productive resources and income opportunities. Landless people, of whom many are women, are engaged in tree plantation of community land with the right to collect wood products for their own consumption or sale. To encourage participation of the poor, the projects have recruited Social Forestry Workers in project areas, and wherever possible, NGOs are enrolled to organize and to increase the awareness of villagers.

## Asset building

The first phase of the projects, beginning in the mid-80s, focused mostly on plantation of trees, distribution of seedlings and creation of employment. Considerable assets have been created in the form of community plantations, village woodlots, trees and forests on private lands. Usufructuary rights to trees and groups of trees have been given to poor villagers, especially women. During the 90s, when these assets are due for harvesting, tenure and management constraints arise. These aspects are now studied, various models tested and the Joint Forest Management concept introduced. In Orissa state, JFM is based on long experience of participatory protection while in Tamil Nadu it is based on sharing of benefits from the forests.




## Environmental concern

In the second half of the 80s and early 90s an increasing concern for the environment influenced the projects. Soil and water conservation was introduced as part of the watershed management concept. Quality aspects were stressed, research and human resources development became important parts of the projects. In Tamil Nadu the project supported establishment of a society for social forestry research and development (see main article). In this period the Dungarpur Integrated Wastelands Development Project was established in Rajastan. It is a highly innovative project to alleviate rural poverty through the creation of sustainable

land-based production systems. Support to the establishment of non-government Tree Growers' Cooperatives commenced also in this period.

### Actual situation

The Tamil Nadu Social Forestry Project is now in a phase of consolidation for sustainability. Organization structures and gained experiences together with adequate management of the assets will be consolidated. The Orissa Social Forestry Project is currently in a transition period into a new programme with a forest sector approach. Management and strengthening of existing organizations are targeted in the developed programme proposal together with technical components such as; eco-restoration, farm forestry, forestry pasture, etc.

### Future

At this stage, when the major components in the Swedish support to Social Forestry in India has come to an end and new programme proposals are under preparation, the future is more unpredictable than ever before, especially in the light of a general study on Swedish contribution to India, where only trends can be visualised.

The Dungarpur Project and Tree Growers' Cooperatives Project are both in running project phases and will continue for some years. The Orissa State has already prepared a new programme proposal to be presented to SIDA. The programme is based on a forestry sector approach. The Tamil Nadu State is also preparing a proposal but it is not yet ready as a draft.

The trend is moving towards a sector approach with human resources development and organisational strengthening as heavy components, development of policies and long-term strategies to be assisted by the programmes, field components with low cost, and site specific replaceable models based on joint management of resources, eco-restoration, succession of species and shared responsibility for implemented activities. More active co-operation between government and non-government organizations, not only in implementation but also in project planning and development, is in line with the future proposals.

**Tamil Nadu Social Forestry Project**

| | |
|---|---|
| Established: | 1981 |
| Budget:(Costs) | 440 million SEK |
| (Swedish cont.) | 313 million SEK |
| Implementing agency: | Government |
| Area: CWDP | 250 000 ha |
| IFP | 150 000 ha |
| Employment effect: | 70 million work days |

**Community Plantations (CWDP).** Plantations of mostly Acacia species on Community lands to meet the local and urban demand of fuel wood. These plantations are mostly found in foreshores or on community hillocks. The revenue from the harvested plantations is shared between the local community and the government.

**Interface Forestry (IFP).** Natural resources management, on watershed basis, including forest lands community lands and private lands. Bio-up-gradation, soil and water conservation together with generation of sustainable employment to rural poor are important components in this programme, focusing on the "interface between the degraded forest and the village". Local institutions have been established to manage the assets created. Benefit flow from the area is shared as per Government Order.

**Agro Forestry in Dry Land.** Small farmers are encouraged to grow trees in their lands through an incentive scheme.

**Dungarpur Integrated Wasteland Development Project**

| | |
|---|---|
| Established: | 1991/92 |
| Budget: (Swedish cont.) | 80 million SEK |
| Implementing agency: | Separate project organization with close NGO involvement. |

The project aims at establishing sustainable rural production systems through the rehabilitation of potentially productive land. All activities are built-up through peoples' close participation with the project and the involved NGOs.

**Orissa Social Forestry Project**

| | |
|---|---|
| Established: | 1983 |
| Budget: (Costs) | 375 million SEK |
| (Swedish cont.) | 263 million SEK |
| Implementing agency: | Government |
| Area: (5 000 villages) | |
| Village woodlots | 50 000 ha |
| Forest land | 24 000 ha |
| Overall effect | 82 000 ha |
| Employment effect: | 34 million work days |

**Village woodlots** have been raised on degraded government land with direct involvement of villagers. The assets created are handed over and managed by the local village organizations. These village committees also organize the benefit sharing on basis of "one family one share".

**Forest farming for the rural poor.** Landless poor families are encouraged to practice agroforestry and tree planting on marginal government surplus lands in and around the villages.

**Reforestation of degraded state forests** includes tree planting on institutional lands.

**Tree Growers' Cooperative Project**

| | |
|---|---|
| Established: | 1992 |
| Budget: (Swedish cont.) | 50 million SEK |
| Implementing agency: | National Tree Growers' Cooperative Federation (NGO) |
| Area: (300 cooperatives) | |
| Tree planting | 10 000 ha |
| Employment effect: | 29 000 families |

Economically viable and self sustaining cooperatives of tree growers are established with initial support from the project. Government wasteland on lease are planted and managed by an elected Management Committee. Training and institutional strengthening are essential components in the project.

Bihar Social Forestry Project
Established 1986-1992.
Rehabilitation of degraded forests with people´s participation and farm forestry.

Natural forest giving way for shifting cultivation with short rotation in Laos (Photo Anders Malmer)

# In India with the World Bank

*By Lennart Ljungman, Senior Forestry Specialist for the World Bank in India 1980 – 85*

## Introduction

When I joined the World Bank Young Professional Program in 1971 my first mission was to India. My colleague *Chip Rowe* and I were asked to appraise a proposal for industrial plantation in Uttar Pradesh for an intended pulp and paper industry. At that time this was the main emphasis of World Bank investments in the forestry sector. Our assessment was that the proposal was unviable. The only part of the proposal that looked profitable was the undergrowth in the plantation, which turned out to be *Cannabis Indica*. That fact was not reported back to headquarters.

Ten years later I was back in India where I was stationed at the World Bank resident mission in New Delhi for five years, mainly working with forestry in India, but also in Nepal and Bhutan. The new position was particularly exciting as among India's forest professionals there was an innovative and progressive thinking and an eagerness to share ideas with us in the Bank for large-scale implementation. This became the embryo of a new forestry development approach called "Social Forestry" and I had the privilege to be part of it right from the beginning.

## Social Forestry in India

In the development community, new concepts are regularly introduced that aim at long-term changes to improve conditions for poor people. Most of them may have been based on sound theory, but few succeeded in the way they were originally intended. Integrated Rural Development is one of them, which resulted in very complicated implementation processes and thus tended to fail in reaching intended results. But even if these projects did not achieve their stated goals, this did not necessarily mean that the efforts were in vain. Likewise, Social Forestry was well intentioned but did not deliver exactly in the way it was anticipated. I had the fortune to follow how it evolved on the ground with the start in 1985 of the first World Bank-supported Indian Social Forest project in Gujarat.

With Social Forestry focus of the World Bank resources was redirected from industrial plantations to rural forest and wasteland support. This was the first time within the Bank that forestry was viewed in a broader context as part of agriculture and energy. The project in Gujarat was followed by similar World Bank-supported projects in other states such as Uttar Pradesh, Haryana, West Bengal, Rajasthan and Jammu Kashmir and a also a National Social Forestry Project.The basis for this was an order from the then Prime Minister of India, Indira Ghandi, in 1980, that all states should have a social forestry project. Many states started such projects and were supported by different aid-donors, of which World Bank and SIDA were among the biggest. The Office of the Director General of Forests in New Delhi coordinated all these projects, and the driving force was the excellent forest economist *Nilu Chatterjee*. We worked very closely together and he had both creative ideas and good relations with all the Chief Foresters in the States.

## Enhancing agricultural productivity

In Gujarat the aim of the social forestry project was to improve agricultural productivity by ensuring that a greater quantity of manure was ending up on the fields instead of being burned for household fuel. Reforesting degraded areas and establishing roadside plantations could provide the supply of fuel wood for poorer families. The local population was expected to jointly establish the plantations with financial support by the project.

However, things went off track early on. First, as a result of the prevailing social stratification dynamics, the poorer community members ended up supplying most of labour without compensation. The poor also lost out in the distribution of the harvested wood, which typically ended up in the hands of the more influential community members. Realizing this, we modified the distribution system so that everybody would receive an equal share of the production, which was easier to control.

Then another problem arose. It turned out that that the market for *Eucalyptus* poles for fencing and house construction was very favourable. As one recipient explained to me: "Why should I burn this wood for fuel? It would be like burning rupee bills!" The end result was that the branches of the trees were used for fuel; the stems were sold for cash and still not much dung ended up as fertilizer.

## Farm Forestry

The different State Social Forestry Projects were different in nature but similar in their social context. In Haryana and Uttar Pradesh the main emphasis was on Farm Forestry, which consisted of the distribution of seedlings to farmers. This was the most successful part of the Social Forestry programme and has made a fundamental change of the landscape and functioning of rural India since the early1980s. More importantly, Farm Forestry gave small farmers the chance to extend beyond subsistence farming to being able for the first time to sell their crop of trees for income. The famous British sociologist *Robert Chambers*, who worked with the Ford Foundation, considered Farm Forestry as one of the most effective means of creating financial capital among the poorest rural populations (even if the income gained was often used for paying their daughter's dowry).

## Eucalyptus as an environmental issue

An issue that was widely discussed and sweepingly criticised was the World Bank's support to the planting of *Eucalyptus* within its social forestry programmes. The species was seen as contributing to drought. However, apart from the fact that this was the preferred species among the recipients of the seedling distribution program, it turned out that the seedlings were to a very high extent planted on the field boundaries of irrigated land, and thus had minimal impact on the availability of moisture for agricultural crop production. On the contrary, in areas with a high water table – which is common with irrigated land – the *Eucalyptus* trees functioned as a natural and environmentally friendly "pump" to keep the water table level in check, thus avoiding costly mechanical pumping and contributing to farm income. It is quite another story when it came to the arid areas, where we discouraged *Eucalyptus* in favour of *Prosopis* and *Acacia.*

## Road Side Plantations

Roadside plantations were a component in all social forestry projects. They contributed strongly to demonstrating that growing trees was technically possible in all corners of India. The shading effect was particularly appreciated. But when these trees were ready for harvesting – not least to avoid accidents from falling trees – there was a strong resistance to harvesting among the local communities. It thus turned out that they were less interested in the economic benefits than the social and environmental benefits the trees gave in terms of shade and a green countryside.

## Watershed Management

The Social Forestry concept was later included in Watershed Management project approaches. The latter was launched by a large subsector mission in the Himalayas in 1984 under the able leadership of *Bengt Nekby*, a Swede with considerable SIDA and World Bank experience. The multidisciplinary mission team was composed of highly experienced technicians with a range of expertise, including social sector competence. Among them, was a renowned watershed management specialist with vast experience from the former British Colonial Services, *Sir Charles Pereira*. Breaking away from the conventional solution of tree planting for watershed treatment, he firmly held that any upland management action had to be related to the specific objective of the treatment. If the objective was to provide water to a dam, the surface of the upland should be as firm as possible, typically involving strong grass cover. But if recharging of the groundwater was the objective, trees could be a suitable crop. But in this case not *Eucalyptus*.

## Innovative socio-technical solutions

The sociologist of the Watershed Management team reminded us that social coherence on treatment of common land was of the essence. Otherwise "the tragedy of the commons" – with the classic example of a commonly used dam where everybody would fish until the stock is depleted, unless there is a social solution to control usage – becomes a reality. The bane of India's common forest land was overgrazing by freely wandering holy cows. The subsector mission came up with the innovative solution of supporting the insemination of local cows by bulky Jersey bulls. The offspring would be highly productive but could, due to their size, not free-graze in the hills. This meant that they had to be stable-fed with cut grass, resulting in higher milk production and availability of manure to fertilize fodder and commercial crops such as ginger. As a result, there was both more income from milk and from food crop production and substantially reduced grazing pressure.

Another soil protection technology, which did not require expensive concrete constructions, was based on simple contour fences with bushes and branches which collected silt, thus becoming a protection wall for further erosion. This methodology was based on SIDA experience in Kenya. Another bio-technical solution was to plant *Vetiver* grass on the contours of eroding slopes, thus providing a very strong and durable soil protection due to the strong root system of the plants.

Since all these solutions were based on local involvement of all the community, the old concept of defining the watershed based on the geophysical boundaries has to be redefined to have the boundaries of local communities as the most important criteria.

## Corruption

Forestry has in most countries attracted corruption. The national forest services typically control a very dispersed but valuable asset. Even India has been accused of corruption within the sector. However, the introduction of Social Forestry greatly reduced the temptation and opportunities for corruption among the Forest Service staff. Nevertheless, since the Forest Service staff controlled expenditures and payment for labour, there were still opportunities – albeit of much smaller scale – to collect illicit payments. Supervision missions regularly monitored this aspect, but to completely prevent corruption would have required very heavy and costly measures.

## The role of the World Bank

Looking back to that decade of India's development, it is interesting to consider what role the World Bank had in the changes within the forestry sector in India. Personally, I found the Bank's ability to convene the different stakeholders – such as the Forest Service, Local Communities, the Technical Ministry, the Wasteland Board, the Ministry of Finance and bilateral donors – to agree on development strategies a compelling advantage. With India being a large country and with resources being particularly scarce back then, the Bank with its resources naturally had a strong bargaining position. At the same time, it was also always clear that in India the Bank was highly respected and had a positive image. This contributed to a free flow of information and knowledge sharing with the World Bank, which provided it with a good base for informed decisions.

But even if this was positive, it begs the question whether the Bank and its staff had too much influence on resource allocation. I don't have a good answer to that question, but from my present perspective I feel that we did not fully achieve our ambition to holistically address poverty in rural India. My experience after my time in India, suggests that more could have been done to support local communities in having had a greater role in the overall governance and management of local forests, particularly by providing them with legal user rights and/or ownership rights to local forest and wasteland resources.

# SIDA assistance to the Forestry Sector in Bangladesh

*By Rolf Gilliusson, Project Coordinator for Swedforest, in Bangladesh 1976 - 1978*

## Introduction

SIDA gave high priority to Bangladesh after its Independence in 1971 and in agreement with the Government identified an integrated forestry and forest industry development project for the main focus of project assistance.

Bangladesh is a small country in terms of land (only 1/3 of Sweden), of which only 15 % is classified as forest land. The population in the 1970s was 90 mill. and is now 152 mill (more than in Russia). The main religion is Islam. The total forest area in the country in the 1970s was about 2.5 million ha. Most forest is state-owned and managed by the Forest Department (FD). Natural high forests, mainly mixed tropical rainforests, have been much depleted or degraded in recent decades. The major part of remaining forest resources lies in the Chittagong Hill Tracts (CHTs) in the south-east of the country on the border to Burma.

Thus the CHTs was selected as project cooperation area. This area with mountains, forest and a population of hill tribes of Buddhist religion is very different from the rest of the country. The hill tribes lived by tradition from rice cultivation in the vallies and shifting cultivation on the forested mountains. In 1962 the Pakistan Government built a hydro power dam in the Karnaphuli river and created the Kaptai lake, which flooded a big area and forced displacement of thousands of native people without giving them compensation. This was the start of a conflict between the hill tribes, particularly the Chakma people, and the central Government. In 1971 the new Bangladesh Government started forestry and forest industry operations in the CHTs and tried to cooperate with the hill tribe people.

The initial request from Bangladesh to SIDA came in 1973. The request contained two distinctive components:

(1) Equipment and supporting technical assistance
(2) Training of forest workers.

After project preparations including a socio-economic study and negotiations in 1975, it was agreed that the cooperation program should include the following four projects:

1. Road development and bamboo extraction project (RDBE Project)
2. Bangladesh forest industries development corporation (BFIDC)
3. Pulpwood plantation project (PPP)
4. Forestry development and training centre (FDTC)

The objectives of the first three projects were essentially production oriented whilst the FDTC had a training and development component which was to support the three other projects.

SIDA selected Swedforest Consulting AB (a subsidiary to the Swedish Forest Service) to assist the concerned local forestry organizations in implementing the projects. Swedforest used its own subsidiary, Teknicus, to contribute in technical matters related to sawmill and pulp and paper technologies.

**Program Implementation**

The project cooperation started in the field in December 1976 when the first long-term consultants from Swedforest arrived with their families to Kaptai and Chandraghona in the CHTs. The two places are located near the Karnaphuli river which runs from the mountains of the CHTs to the west and ends up in the sea near the port of Chittagong. The work in the four projects is briefly described below.

***1 . Road Development and Bamboo Extraction Project (RDBE Project)***

The overall objective of this project was to increase the supply of fibrous raw material from the CHTs to the Karnaphuli Pulp, Paper and Rayon Complex in Chandraghona. The raw material requirement for full utilisation of installed capacity was 100,000 tons of bamboo (of 2 species) to produce 30,000 tons of paper per year. However, in 1974 only 20,000 tons of bamboo were extracted, i.e. 20 % of full requirement, due to problems in the cutting, transporting and handling of the bamboo.

The bamboo was cut by local labour in the CHTs and transported by water (floating rafts) downstream on rivers and the Kaptai lake to a landing at the Kaptai power station dam. There the bamboo sticks were picked up by hand and loaded on tractors and transported by road to Chandraghona.

The RDBE project had the following working objectives:

- To cut 42,000 tons of bamboo in the forest every year
- To transport the bamboo from the forest to the river bank by aerial ropeways and tractors and from there by rafting to Kaptai
- To take up the bamboo in Kaptai by help of a roller system and directly chip it there
- To transport the bamboo chips to Chandraghona by an aerial ropeway (or trucks)
- To store the bamboo chips in stacks in Chandraghona

The RDBE project was the biggest in terms of funding of the four SIDA-supported projects. However, it was delayed and was not fully completed when the program terminated in 1981. Some equipment and consultant activities continued for some time by help of Swedish commodity aid.

***2. Bangladesh Forest Industries Development Corporation (BFIDC)***

This project dealt with support to the state-owned forest industry corporation which extracted timber from the natural forest in the CHTs and processed it in a sawmill in Kaptai. The project was divided into the following two sub-projects:

*2.1. Karnaphuli Valley Timber Extraction Project*

This project was responsible for the extraction of logs from the forest through the following operations:

- Building and maintenance of forest roads
- Logging (felling, crosscutting and skidding by crawler tractor to landing)
- Log transportation by truck from landing to riverside
- Log transportation from landing to Kaptai by barge or floating

Detailed studies of the whole logging and transportation system was carried in 1977. The operation was losing money. Qantities felled exceeded those that was transported from the forest. Logs were piling up and rotting. The consultants made important inputs into developing a planning and control system and into planning and building of forest roads. Replacement of the axe with chain saw began. New accommodation was built at the logging centres in the forest. Maintenance of equipment and machinery was improved. New field workshops were constructed and the central workshop in Kaptai was extended.

*2.2. Lumber Processing Complex*

This sub-project supported the BFIDC sawmill in Kaptai. It had not been foreseen in the first plan of operation. The sawmill was constructed in 1971 with assistance from Poland. One of the major causes of financial difficults in the sawmill was the deterioration of logs before reaching Kaptai. This led to low output in the sawmill and low selling prices. Discussions between the consultants, BFIDC management and SIDA-DCO led to provision for sawmill equipment and technical assistance in overcoming these problems.

***3. Pulpwood Plantation Project (PPP)***

The first plan of operations introduced this Forest Department project as an industrial forest plantation project to provide pulpwood to the pulpmill in Chandraghona. However, gradually the project was developed into a social forestry project involving the hill tribe people not only as labour but also to share the result of intercropping of trees with hill rice, cotton, chili and vegetables. It was an early agroforestry attempt that promoted cooperation between the state Forest Department and the hill tribe people.

The main tree species planted were indigenous species of short fibre such as *Gmelina arborea* and *Anthocephalus cadamba*. Some trials were also made with *Pinus caribaea* (long fibre). In total 5,022 ha were planted during the program period and a lot of nurseries, roads and buildings were constructed..

***4. Forestry Development and Training Centre (FDTC)***

In the preparatory planning of the programme, it was found that there were considerable gaps in the forestry education and training system in Bangladesh. There was a Forestry College in Chittagong for training of Range Officers and a Forestry School in Sylhet for training of Forest Guards. It was realised that the three SIDA-supported projects in the CHTs could hardly advance unless training of workers and supervisors were started in a systematic way. The solution was to establish a Forestry Development and Training Centre (FDTC) in Kaptai to be operated by Forest Department. The long-term objective of the centre was to improve the forest and forest industries in Bangladesh in general and in the CHTs in particular, through development activities and goal-oriented training.

The building of FDTC was organised as a Building Project managed by the consultant (Swedforest). The FDTC complex should include the following buildings:

- Academy building and offices
- Student hostels (15 rooms)
- Officer´s hostels (10 rooms) and 5 houses for officers
- Pulpwood Plantation Project office

It was very difficult to find a suitable site for the centre in the hilly and steep terrain in Kaptai. The final site was selected in 1978 and the construction was completed in 198

During the program period, the FDTC-project carried out a lot of training, in total 63 courses in the field of transport and maintenance, basic logging, plantation, extension and other, involving 514 trainees, of which 18 % tribal people. There was also a program of overseas study tours and training involving some 75 officers from the four projects.According to Forest Department´s Internet homepage in 2012 FDTC in Kaptai is still in operation and conducting training courses for forest staff, BFIDC staff, sawmill employers and NGO staff.

## The Political Conflict in the CHTs

As mentioned in the Introduction, a conflict between the hill tribes in the CHTs and the central Government had started already in the 1960s. It was a political conflict over the issue of autonomy and rights of the indigenous people. In the 1970s the conflict escalated when the hill tribes formed a ”peace fighter” troop called *Shanti Bahini*, which attacked a government military troop in 1977.

The Swedish consultants who arrived in late 1976 were not fully aware of the size of the conflict. It became more clear when they had to have armed guards when going into the forest, and when they saw dead bodies of tribal people being piled up at the market place in Kaptai. At one stage, SIDA was considering to stop the project at the end of 1977, but finally decided to fulfil the current cooperation agreement up to 1981. A consequence of the conflict was that some consultants tried to minimize their visits into the forest and focussed on work in Kaptai and Chandraghona.

Peace negotiations to solve the conflict were initiated in 1991, and the Chittagong Hill Tracts Peace Accord was finally signed in 1997. The conflict had lasted for about 20 years and some 1,700 Bengalis and tribal civilians had been killed.The agreement recognised the ethnicity and special status of the tribes and established a Regional Council that would have authority and responsibility. The Central Government would be required to consult the Regional Council over all issues concerning the CHTs. After the treaty, *Shanti Bahini* insurgents formally laid down arms and received monetary compensation. More than 50,000 displaced tribals were able to return to their homes.

## Termination and Evaluation

The SIDA-supported forestry program in Bangladesh terminated formally in June 1981. There was no extension of the programme due to the political conflict in the CHTs. The total SIDA funding of the four projects was 47.6 mill. SEK of which 28.3 mill. SEK as cash contribution and 19.3 mill. SEK as payments to the consulting firm (Swedforest).

The Program gave important experience to both SIDA and Swedforest. The project coordinator in 1978 - 81, *David Palin*, wrote an extensive Summary Report. An evaluation of the Program took place in Bangladesh at the end of 1981. Palin also led a 2-day follow up and evaluation seminar in Färna, Sweden, in January 1982 with participants from SIDA, Swedforest and SLU (Swedish University of Agriculture and Forestry). The seminar discussed SIDA´s project organisation and management based on experience from the Bangladesh Program.

Program reports and the final evaluation documents are available in SIDA´s archives at *Riksarkivet* in Arninge, Täby, Sweden.

## With Swedish Match in Bangladesh

*By Göran Skarner, Vice President, Forestry, for Swedish Match, in Bangladesh 1986-88*

### Dhaka Match Industries Company

Swedish Match was, and still is, a Swedish private company, with industries around the world and big match industries in Asia. Dhaka Match Industries Co. (DMI) in Bangladesh was formed in 1984 by Swedish Match (60%), Swedfund (10%) and the remaining 30% by a state owned company by taking over two government owned match companies. A modernization program of match production was initiated targeted to produce 55% of the total match market in the country with a production of 40 billion matches annually. The wood supply situation was regarded to be one of two major bottlenecks and key problem for the company.

Within my 35 years (1974-2009) as an international consultant, I spent 1½ year in 1986-1988 as Vice President, Forestry, with Swedish Match in Bangladesh. My predecessor was the americaborn Swedish forester Roy Larsen. There was no international consultant successor after me, as trained local professionals took over. As the Vice President, Forestry, I had the responsibility for implementing measures to improve yield and economy of splint-wood (for matchsticks) and box-wood (for veneering in the matchbox production) supply and for determining measures for the wood supply to the two match factories. I was a member of the management team of DMI, reporting directly to the Management Director.

### Tree species used

The wood consumption for the two units together was 65 000 m3 roundwood/year. About 50% (20 000 m3) of the splint-wood raw material supply consisted of the species *Gewa* (Exaecaria agallocha) and was the most important species for production of match splint. This species was especially of great importance for the the Khulna factory 150 km SW of Dhaka which had the Sundarbans mangrove forests as the main raw material base. However, *Gewa*, being a mangrove growing and environmentally sensitive species, was commercially rapidly decreasing and had to successively be replaced by other species such as *Kadam* (*Antocephalus cadamba*), *Chatian* (*Alstonia scholaris*) and *Pitali* (*Trewia nudiflora*). Also new species for splint production was looked for and studied.

For box production *Semul* (Salmalia malabarica) was by far the most important species as 26 000 m3/year were used. The supply in Bangladesh was limited and import from Nepal was studied and considered. The wood utilization at the beginning was only 20%, the rest became waste.This is a very low figure. Improvements in the production were initiated to improve the yield and economy and to reduce the need of wood, and a purchasing strategy was developed to secure the wood supply.

### Logging among man-eating tigers

Logging in the mangrove forests of Sunderbans is quite special as the ground is very swampy and from time to time flooded. There was no possibility to harvest the timber by machines. So the workers used traditional tools such as handsaws and axes. Thereafter

they simply dragged the logs by hand to the waterside where they (the logs) were collected in rafts and further transported by tug boats to the industry.

The highest risk factor working in the mangrove areas in the Sunderbans in south-western Bangladesh was attacks from the big population of wild tigers. Man-eating tigers were common, and as average they caught one human body per day in the Sunderbans. I experienced to be only 100 meter from a fisherman, when he was killed by a tiger. The workers used face masks on back side of their heads to scare off tigers, who only attack from behind, when they do not see the human face. As management staff I was then not allowed to move in the mangroves without having people both in front of and behind me.

## Agroforestry models

My work also included development of a suitable concept for promoting matchwood plantations in the country. Here cooperation was established with local farmers on an agroforestry model including a micro-credit scheme, where experience from a successful already developed programme by a Swedish Match company, WIMCO in India, was drawn, as well as experience gained by Swedish Match in Thailand and the Philippines. Also cooperation was established with big tea plantation companies in the country and a study made of species to be useful both as tea plantation shade trees and as match wood raw material. Separately wood market and procurement studies were made together with financial analyses resulting in improved tools for development of wood supply and marketing strategies for the industries.

For the long term wood supply training of local staff was very important and an on-the-job training and transfer-of-knowledge programme was introduced. A local professional forestry team was built up for the wood supply activities and to replace the need for further input from international consultants.

## A different experience

The forestry work with Swedish Match in Bangladesh was rather different from other consultant work with development organizations. For instance were speedboats made available for the wood supply staff and they were the major means of the personal transport in the mangrove areas of the Sunderbans. That was a great experience in very special biological conditions and rather different from conventional forestry.

The work to get wood on the mainland was mainly not carried out in big forest areas of indigenous forests, as could be seen in the more mountainous areas of the eastern parts of the country, or in big forest plantations. Rather a purchase system was developed where individual trees were purchased here and there by local purchasers from small farmers, collected into smaller depots and further collected in bigger depots for further transportation to the industry wood yards. The work was purely commercial oriented, where production result was measured and targeted in line with the industrial production.

The work all ended up in a very interesting and team-building experience in a country where forestry had to be seen from a different angle than conventionally done by a forester.

# Proposed forestry activities in Sri Lanka

*By Sten Norén, forestry consultant at IRDC, SLU 1980 – 1994*

## Swedish development cooperation with Sri Lanka

Sweden has had development cooperation with Sri Lanka from 1958 to 2010, a period of 53 years. Sweden has provided around 8 000 MSEK in year 2008 prices, which is about 4% of the total bilateral and multilateral aid to Sri Lanka, during that period. The cooperation can be divided into three phases:

1. 1958 – 1977 Socialistic Government in Sri Lanka. Support mainly to Family Planning.

2. 1977 – 2002 More marketoriented and liberal Government. The support widened and included for instance Matara Integrated Rural Development Project (MIRDP) and Kotmale Dam Project.

3. 2002 – 2010. Several changes in of the Government. The Great Tsunami in 2004 drastically increased humanitarian aid from all donors for a short period. Hard Government policy finally led to crushing of the Tamil Tigers movement in 2009. Sweden tried to support peace and democracy mainly through the civil society, NGOs, to avoid the hardline Government, and in the end started phasing out of the aid.

Matara is a District in southern Sri Lanka (130 000 ha, 640 000 people), fairly well developed along the coast in the south, less so in the dryer north. Matara IRDP started 1979 and had three phases: 1:1979 – 84, 2:1984 – 88 and 3:1988 – 92, prolonged to 1996. Particularly from phase 2 the project had an emphasis on social mobilisation and peoples participation in line with SIDA:s Strategy for Rural Development of 1982. Many other districts at that time had IRDP-project supported by different donors; most of them also had a forestry component.

Forestry was from the start of Matara IRDP identified as one sector to be included in the integrated approach, and some trees were planted during the two first phases. In connection with planning of the third phase SIDA and the Project agreed that a consultancy should be carried out in order to identify and propose a component of social forestry and soil conservation for MIRDP. The consultants were *Mr Sten Norén,* Forestry Consultant at the International Rural Development Centre (IRDC) of the Swedish University of Agricultural Sciencies (SLU) in Uppsala and *Dr Ulla-Britt Engelbrektsson,* Senior Research Officer at the Department of Social Anthropology of the University of Gothenburg. They were in Sri Lanka 11.1 – 12.2 1988.

## Forestry in Sri Lanka

Information below is taken from the report of the Mission. At that time the total area of forest land was reported to be around 2.8 mill.ha., which is around 40% of the land area. Of this 85% was semi-decidous dry forests in the northern and eastern part of the country and 15% evergreen rainforest in the south-western parts and in the mountains in the

middle of the country. Matara had 17% of the land area as dense forests, scattered. It can be assumed that the country´s forested areas are considerably less today (2013). However , there are also non-forest wood resources in form of rubber trees, coconut palms and trees in homegardens etc. which were then estimated to 2.9 mill. ha more than the forests!

All forests are state owned and managed by separate organisations. Forest Department (FD), which celebrated its 100 year anniversary in 1987, is a rather traditional, Brittish-inspired organisation headed by a Chief Conservator of Forests (CCF). Under him are 14 Forest Divisions, 58 Ranges and 328 Beats, all headed by forestry staff of varying ranks. Forest Department guards and manages around 2.0 mill. ha. of Forest Reserves, of which about half are timber productive. Logging and transport in Forest Reserves is done by the State Timber Corporation (STC), headed by CCF. Department of Wildlife Conservation is responsible for the 0.8 mill. ha. of National Parks and Nature Reserves. Forest plantations, then 75 000 ha mainly in the Upcountry and Dry zones, consists of Pinus, Eucalyptus and Teak.

The wood industry in 1980s consisted of a large number of small sawmills and two plywood mills. They consumed around 1 mill. m3 of roundwood per year, of which 20 % was estimated to be illegally cut. There were also two paper mills, but they used grass and agriculture residues as raw material.

Fuel-biomass demand was estimated to be 16 mill. m3 by year 2000 and was only to 20% met by fuelwood from natural forests (1 mill. m3) and forest plantations (1.5 mill.m3). The other 80% comes from rubbertrees, coconuts, tea, mixed trees, homegardens, paddy bushes and straw, bagasse, and residues from sawmills. A considerable part of fuelwood is used in small scale industries such as tea drying, brick-burning and lime burning.

Sri Lanka did not have a forestry training of its own until mid 1960s. By 1988 it had two forestry Colleges for training of Rangers and Forest Guards. For higher training staff was sent to Dehra Dun Forest College in India. Forestry Research was small at that time. A number of forestry projects supported by various donors were ongoing in the end of 1980s.

Social Forestry and Agroforestry were rather new concepts in 1980s and not so widespread in Sri Lanka. In 1985 an Extension Forestry Division was formed in FD, and a Programme formulated. It was to be carried out by Forest Extension Units in each of the 24 Districts in the country. Parts of the Programme had started in some Districts, e.g. in Matara District.

**Proposed forestry activities within Matara IRDP**

The consultants had introductory meetings, travelled to several parts of Matara and to two closeby Districts with IRDP with forestry components and then made an analysis of the situation. Together with staff from MIRDP and Forest Department they worked out a proposal on a forestry component. It was based on policy guidelines for IRD, ideas from other IRDP and ongoing forest extension activities. They were careful to take up and analyse local ideas. The components should start in small scale and be of an experimental nature. The final draft was approved by MIRDP Project Director.

The results of the activities should not in the first hand be measured by the number of acres planted or number of trees given to people. More important was to see if the attitudes and knowledge of the small scale farmers have been influenced. To achieve that you must also affect the attitudes of forestry staff and other extension agents, so that they are trusted and can have a good dialogue with the farmers. Training of staff on those

matters was therefore a most crucial component of the proposal. In order to have something to evaluate against, a socio-cultural baseline study was proposed, preferably to be made by a local sociological consultant.

The proposed social forestry and soil conservation component of Matara IRDP phase 3, 1988- -1992 was as follows:

| Budget 1 000 Rupees | |
|---|---|
| 1. Agroforestry and soil conservation | 1 030 |
| 2. Village reforestation | 1 990 |
| 3. Village Forest Societies | 420 |
| 4. Agroforestry in encroached Forest Reserves | 120 |
| 5. Coastal plantations | 65 |
| 6. Forestry research | 285 |
| 7. Forest extension and training | 800 |
| 8. Staff | 450 |
| 9. Vehicles and equipment | 1 550 |
| **Total** | **6 710** |

That corresponded to 3% of IRDP budget for this period
With 1 SEK = 5 rupees this means **1 342 000 SEK**

In February 1988 SIDA:s Appraisal Mission for phase 3 of MIRDP took place. It recommended a number of changes in the project proposal from MIRDP and the budget was reduced and set to 200 mill. Rupees = 40 mill. SEK. A social forestry component was included, budgeted to 2.0 mill. Rupees = 400 000 SEK = 1% of the total budget. That meant that many of the activities proposed by the consultants would not be possible to carry out. The final outcome I am unfortunately not aware of.

**Evaluation 2012**

In 2007 the Swedish Government decided to end the development cooperation with Sri Lanka (as well as with Vietnam and Laos) in order to reduce the number of countries with which Sweden had development cooperation. Then Sida decided to thoroughly evaluate the Swedish aid to these three countries. The task to do this evaluation was after bidding in 2010 given to the Australian company GHD (Gerhald Haskins & Geoffrey Davie). The result was published in three booklets in Sida:s Evaluation series. Nr 1:2012 was titled "Evaluation Study of Long-Term Development Co-operation between Sri Lanka and Sweden". The Study was quite general and concentrated on the primary question: How, and to what extent, did Swedish development cooperation contribute to poverty reduction?

Regarding the first phase of support (1958 – 77) the evaluation team thought that support to family planning was a success and had a longlasting, positive effect on attitudes and poverty reduction. For the second phase (1977-2002) the team made a case study of Matara IRDP. It noted that the Project was rather unique in focusing on social infrastructure – e.g. schools, health clinics, housing for the poor – rather than on economically productive infrastructure and on encouraging social change through participatory approaches among the poor. It has had a positive effect on the Government policy more broadly. However, there was little evidence that MIRDP has had a noticeable impact on the ultimate goal of poverty reduction in the district. The fact that IRDP offices

were set up outside the regular district administration made sustainability difficult. Forestry as a very minor component was not mentioned at all. The third phase (2002–10) was difficult as Sri Lanka and Sweden had different goals for the desirable development of the country.

**The final conclusion was that Swedish aid had contributed only marginally to the lowering of poverty, as it constituted only a small share (< 4%) of total aid to Sri Lanka**.

# Forestry School Teacher in Iran

*By Sten Norén, Associate Expert for FAO, in Iran 1967 - 69*

## Forests in the Elburs Mountains

Are there forests in Iran? Much of the country is desert, but on the northern slopes of the Elburs Mountains north of Teheran there are beautiful Middle-European broadleave forests consisting of *Carpinus, Fagus, Alnus, Querqus, Acer* and other species, sometimes 1m in diameter and 30-40 m high. In 1960s the area was estimated to around 1 million ha, certainly less now, but some are remaining on the inaccessible steepest slopes high up. Only limited areas are used for managed forestry, mostly by private entrepreneurs who get concessions in the State Forests. In 1960s there were only o few sawmills, some plywood factories, one board factory and dreams of a future pulp and paper factory in the country.

In 1963 a FAO-project started a Forest Faculty at Teheran University at Karadj outside Teheran. Connected to the Project was also the Forestry and Range School training foresters in the town of Gorgan 30 km east of the Caspian Sea. The School had started in1957 with American aid. There I served as a FAO associate expert/teacher during 1967-69.

## Teaching four subjects

I and my wife arrived there in May 1967, but I did not start teaching until October. The start of the semester had been delayed, partly due to the coronation of the Shah, which took place in Teheran on October 25. I remember that I became quite frustrated at the end of that waiting period! When I finally started teaching there were 60 students in the class. My subjects were *Mapping, Photinterpretation, Roadbuilding and Wildlife Management*. The last subject was not really my speciality, but I managed to find a good American book in the library and arranged some study tours to the game parks of the Shah, so I think my work was approved.

I was teaching in English, but the students were not so good in that language. So I had to have a counterpart, a forest officer graduated from Karadj, who translated what I said into Farsi, the local language. On practical exercises I divided the class into two parts, 30 students in each, to be able to handle it. It was striking that when I had taught something in the class and came out to practice the knowledge, for instance handling of a compass, the students had no idea of what to do! Their earlier school system had not taught that something theoretical learnt also could be practiced in real life. They mostly learnt by heart to be able to pass exams. In the summer we had practical exercises in the school forest outside Gorgan living in tents for some weeks.

## Expansion to 180 students in 3 classes in grade I

In October 1968 the School increased the intake of students to 180, three classes with 60 students in each class! Then I was helped by two counterparts who had recently graduated from the Forest Faculty in Karadj. Now they made their military services as teachers at Gorgan, a system of utilizing academics in the countryside, which the Shah had

introduced as a part of his “White Revolution”. I had also an assistant, graduated from the Gorgan School in 1968, who assisted in practical work. I think I had 28 lessons per week that semester. In the spring of 1969 the counterparts could take over the training and I could concentrate my work on finalizing compendiums/text books before leaving the country in May 1969, travelling by car back to Sweden. It took us 6 weeks including stopover for debriefing at FAO in Rome.

# Forestry in Indonesia

*By Jozsef Micski, Forestry Consultant in Indonesia 1991 – present*

*Jozsef Micski has been involved with the Indonesian forestry sector and particularly with the Ministry of Forestry since March 1991 when the below mentioned NIB/NDF project started. He has been working in Indonesia for Swedforest Consulting AB from 1991-1995; for the European Commission from 1996-2003 and 2006-2009; from 2004-2006 he worked for GTZ, the German aid organisation. From mid-2009 Micski is working as freelance consultant, living in Bogor just outside Jakarta.*

## Indonesia's forests

Indonesia's forest cover was in the 1960s about 148 million hectares, second to Brazil only in the world. But due to large forest fires in 1997/98, extensive deforestation as a consequence of the decentralization era and illegal logging from late 1990s to mid-2000 the forest area has now been reduced to below 100 million hectares. As a consequence Indonesia has now slipped to third place in the world, behind the Democratic Republic of Congo, in terms of overall forest cover. The main part of the natural forests consists of topical rainforests with a vast diversity of tree- and plant-species.

According to the interpretation of 2009/2010 Landsat 7 ETM+ Satellite Images Indonesia's land territory is 187 million ha, of which almost 100 mill.ha are regarded as forests. These forests can be divided into three groups:

| | |
|---|---|
| Primary, almost untouched forests | 43 mill. ha |
| Secondary, disturbed forests | 52 mill. ha |
| Plantation forests | 4 mill. Ha |
| **Total** | **99 mill. ha** |

All forests within the territory of the Republic of Indonesia including all the richness contained therein are under the State's control for people's maximum welfare. Based on Forestry Ministerial Decree concerning Provincial Forests and Marine Conservation Areas the total designated state forest area is: 134 mill. ha. The 1999 Forestry Act distinguishes between three forests types with the following areas:

| | |
|---|---|
| Production forests | 78 mill. ha |
| Protected forests | 32 mill. ha |
| Conservation forests | 24 mill. Ha |
| T**otal** | **134 mill.ha** |

The difference between 134 mill.ha and 99 mill.ha is difficult to explain. I may depend on different basis for datacollection, different years of assessing or general uncertainty. According to above statistics 187 – 134 = 53 mill. ha are outside designated State Forest areas. These areas may or may not have forest cover and can belong to companies, individuals, traditional right holders, etc.

The deforestation rate during the period 2006 – 2010 was 830 000 ha per year, which means 4 150 ha during that 5-yearperiod. The reforestation = plantation for the same

period was totally 850 000 ha. That means that only 1/5 of the deforested areas were replanted. Much forest land is converted into agriculture land, often planted with oil palms.

**Licenses**

It is the Minister of Forestry who grants licenses to commercially utilize timber in natural forest or for development of plantation forests. The license could be issued to individuals, cooperatives, private companies or state-owned enterprises/local government owned enterprises. Based on data up to December 2010 there were 304 licenses/forest concessionaires in Indonesia covering a total area of 24 million hectares, as follows:

| Region | Units | Area, million ha |
|---|---|---|
| Sumatera | 30 | 9,6 |
| Kalimantan | 176 | 5,5 |
| Sulawesi | 24 | 1,5 |
| Maluku | 27 | 1,2 |
| Papua +West Papua | 47 | 8.7 |
| **Total Indonesia** | **304** | **26.5** |

License to run business of industrial plantation is issued in a similar way. Up to end of December 2010 there were 241 units of licenses/industrial plantation companies with a total working area of 9,4 million hectares and a planted area of 4,3 million hectares. Plantation development were going slow, in 2010 only 400 000 ha were planted that year.

It should be noted that in 2010 a total of 44.000 forest workers were employed, 30.000 in natural forest concessions and 14.000 in plantation developments.

**Forest Management**

Indonesia is applying the so called MSS = multi-silvicultural-system. It means that in each concession area 4 different silvicultural systems can be practiced after approval from the authorities. These are:

a) TPTI = Indonesian Selective Cutting System, which was used vastly from mid-1960s. Trees over 50 cm in diameter can be logged only.

b) Enrichment planting. If the natural forest is too fragmented and sparse it can be improved by employing enrichment planting in gaps, areas with few commercial species, etc.

c) Intensive silviculture or line planting. Lines can be cut at about 30 meters interval where commercial species could be planted to increase stock density and value.

d) Clear cutting. It is allowed if the per hectare volume of commercial species is less than 25 m3.

These are the official silvicultural systems which the concessionaires should use after approval from forest authorities. However, in reality the authorities have low capacity to

follow up these directives. Often only valuable species are cut out and planting is seldom done.

## Certification

As elsewhere in the tropical forest sector, Indonesia has seen the growth of timber certification schemes to promote better forest governance and reduce illegal logging. However, in Indonesia it has taken a different path from those observed in other parts of the world. In fact, Indonesia pioneered certification of forest products by setting up in 1990 a certification programme in teak operations in Java. In 1993 the Indonesian certification system Lembaga Ecolabel Indonesia (LEI**)** began working, the same year as Forest Stewardship Council (FSC**)** had its founding meeting in Toronto.

However, LEI met opposition from a number of NGOs, and competition emerged between LEI and FSC in spite of an agreement in 1998 to deliver joint certificates. LEI, which is endorsed by PEFC and supported by ITTO, is regarded as having less stringent rules than FSC. In June 2012 LEI has certified 1.4 mill ha and FSC 1.2 mill.ha of forests in Indonesia.

## Forest industries

*Mechanical wood industries*

The Ministry of Forestry is issuing licenses for Primary Timber Industry with a capacity >6.000 m3/year. In 2010 there were 4 veneer industries with a licensed capacity of 230.000 m3/year and 9 sawn timber industries with an installed capacity of 164.500 m3/year. In addition there were 14 integrated wood industries, i.e. sawntimber + veneer; sawntimber + wood chips; sawntimber + plywood; plywood + veneer; sawntimber + plywood + veneer and sawntimber + plywood + veneer + LVL with an annual licensed capacity of 1.240.500 m3.

*Pulp and paper industries*

This group of industries is reporting to the Ministry of Industry and not to the Ministry of Forestry. According to the latest available statistics Indonesia's pulp production capacity grew from 606,000 to 7.9 million metric tons per year between 1998 and 2010. During the same period the paper industries' processing capacity increased from 368,000 to 7 million metric tons and paper production increased from 930,000 to 10.5 million tons.

*Non Timber Forest Products*

Indonesia also producing considerable amounts on Non Timber Forest Products (NTFP) like rattan, gum resin, resin, turpentine, copal, sap, charcoal, gahuru, cajuput oil, honey, cocoon and silk yarn.

*Export/Import*

Only processed wood can be exported from Indonesia. In 2010 Indonesia exported mainly to Asian countries such as Japan, China, South Korea as well as to Australian, European and USA markets.

The imported products were mainly from Asian countries such as China, Malaysia, Japan, New Zealand and outside Asia Germany, United States of America, Brazil and Sweden

**Export and import of wood and forest products**

| ***Commodity*** | ***2006*** | | ***2007*** | | ***2008*** | | ***2009*** | | ***2010*** | |
|---|---|---|---|---|---|---|---|---|---|---|
| *In million kg* | *Export* | *Import* | *Export* | *Import* | *Export* | *Import* | *Export* | *Import* | *Export* | *Import* |
| Roundwood | - | 50 | - | 55 | - | 58 | - | 24 | - | 54 |
| Sawnwood | 44 | 180 | 63 | 35 | 51 | 193 | 35 | 129 | 32 | 141 |
| Plywood | 1 980 | 58 | 1 600 | 54 | 1 668 | 53 | 1 431 | 37 | 1 840 | 62 |
| Pulp | 2 813 | 922 | 2 437 | 893 | 2 615 | 1 156 | 2 243 | 1 080 | 2 572 | 1 234 |
| Veneer sheets | 8 | 17 | 3 | 8 | 12 | 21 | 8 | 15 | 10 | 14 |
| Particle board | 12 | 84 | 6 | 152 | 4 | 230 | 11 | 177 | 9 | 213 |
| Fibreboard | 205 | 63 | 215 | 63 | 180 | 102 | 172 | 96 | 152 | 104 |

As can be interpreted from these figures Indonesia is a big net exporter of plywood, pulp and fibreboard. For sawnwood, veneer sheets and particleboard import is bigger than export

**Involvement in the forestry sector from Sweden**

During the last two decades direct Swedish involvement in the forestry sector was very limited due to the fact that Indonesia was not a SIDA recipient country due to the high GDP/capita of Indonesia. Nonetheless with financial support from the Nordic Investment Bank (NIB) and Nordic Development Fund (NDF) a 3 years soft-loan project, "Central nurseries and forest management" was implemented from 1991 to 1993. The main actor was ENSO from Finland together with the then Rymdbolaget, (Swedish Space Agency.)

The aim of the Project was to establish large scale central nurseries for production of polytene tube seedlings to be used in establishing large scale industrial plantations to provide raw material to the fast expanding pulp industries. Rymdbolaget together with Swedforest Consulting AB studied the possibility of using satellite images for land use classification, which proved to be possible. However, the loanfunds were finished after 3 years, so the result in form of plantations was very limited.

In January 2004 the Provincial Regional Planning Board of Jambi Province, Sumatra, submitted a draft Project proposal to the Swedish Embassy for funding consideration. A team was sent to Jambi to undertake a thorough analysis of the proposal, but the project has not been funded, most likely because Indonesia did not qualify for being a SIDA country.

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Crawler tractor extraction in selective logging in dipterocarp forest in Sabah, Malaysia (Photo Anders Malmer)

## Researcher at CIFOR in Indonesia

*By Reidar Persson, Assistant Director General at CIFOR in Indonesia 1997 – 2000.*

*In 1983 I joined Sida in Stockholm and of family reasons I stayed on year after year. In the mid 1990s I was fed up with Sida and started to apply for different jobs around the world. After some confusing turnabouts I ended up at CIFOR (Center for International Forestry Research) in Bogor, some 50 km south of Jakarta at Java in Indones**ia.***

### The start up of CGIAR

In books about "aid" the CGIAR (Consultative Group of International Agricultural Research) is often described as one of the best examples of successful aid. What is now the CGIAR started really by the establishing of a predecessor to CIMMYT (International Maize and Wheat Improvement Center) in Mexico in 1943. This was done by the support of Ford Foundation, and this organization and Rockefeller Foundation was also establishing IRRI (International Rice Research Institute) in the Philippines in 1960. These institutes were important for the start up of the Green Revolution, the basis of which was improved agriculture production through genetic improvements of crops, more fertilizer, enough water etc. In this context I can also mention that there has lately been a lot of discussions between supporters of the "traditional" green revolution ideology and supporters of a more "modern" approach which means working with natural resources and rights at large.

In those days there was much talk about the coming global famine and many saw the need for intensified agricultural research. Rockefeller and Ford couldn't take on the whole burden. In 1971 the CGIAR was started and it can be seen as a donor group for research about tropical agriculture. It is a network rather than an organization. Important actors in the start up of the CGIAR were – in addition to Ford and Rockefeller Foundations - World Bank, FAO and UNDP. Support was initially given to four institutes that worked with many tropical crops, but also with cattle, policy, genetic resources etc. In 1983 there were in all 13 institutes in the CGIAR. In connection with a reorganization 20 years ago ICRAF (International Centre for Research on Agro Forestry, later renamed World Agroforestry Center) in Nairobi, Kenya, was included in the CGIAR.

During the first decennia of the CGIAR the institutes developed their research programmes in a dialogue with advisors at the CGIAR. Then the institutes were given the funds needed to do the work (the World Bank was a donor of last resort).This era is now over and the CGIAR institutes must chase funds just as a Swedish university (only 30% is now budget support compared to 65-70% earlier). During the last 20 years continuous reorganizations of the CGIAR institutes have taken place. The work of the CGIAR is now very much depending on buzz-words in the donor mafia. In all there are now 15 institutes within CGIAR spread around the world.

For an outsider it may seem that the last decennia have been problematic. Insiders mean there are both advantages and disadvantages with all the changes. In spite of all reorganizations the CGIAR-institutes are still making a lot of valuable research. This is not least valid for CIFOR and ICRAF which have both been given considerably increased funding during recent years.

## What is CIFOR?

The interest for the forests in the tropics increased strongly in the 1980s and the programme Tropical Forestry Action Plan (TFAP) was started in 1985 (mainly because of reports about fast deforestation in the tropical countries). TFAP planning processes started in many countries. The need for more forestry research was coming up and the idea of a research institute for tropical forestry attached to the CGIAR was being born. One reason for the interest in this idea within the CGIAR was that many hoped that forestry – which seemed to be popular then – would mean more funds to the CGIAR as a whole.

After long discussions the Centre for International Forestry Research (CIFOR) was established in 1993 in Bogor, in Indonesia. Sweden was one of the four funding countries of CIFOR and *Professor Bo Bengtsson*, X-Director of SAREC, (Swedish Agency for Research Cooperation) was the first Chairman of CIFOR. The establishing of CIFOR did not mean more funds to the CGIAR as a whole and CIFOR is still one of the smallest CGIAR institutes, but has recently got considerably increased resources.

## My work at CIFOR

When I joined CIFOR in 1997 I found that it was a very efficient and dynamic organization. CIFOR had aroused interest among researchers around the globe and in the first batch working at CIFOR there were a number of very qualified researchers whom I would classify as stars. The administration was utterly effective and non-bureaucratic. CIFOR is in summary the best organization I have ever worked with.

When I arrived at CIFOR the budget was about 12 million US$ .The total staff was about 150 of which 50 were internationally recruited scientists. The big research subjects were e.g. underlying causes of deforestation, community forestry, plantations, Criteria and Indicators for Sustainable Forestry and Reduced Impact Logging. Since then the program has developed with new hot subjects like climate change. The research is normally done in co-operation with e.g. national research institutes. Quite a lot of the research is about policy and social and economic issues. Information is often collected through field studies, but attempts are also being done to analyze and summarize existing research.

At CIFOR I became at the start head – and only researcher actually – for a section that worked with certain all-embracing global issues, such as climate and fires. After some months I was also appointed as "Assistant Director General". That sounds impressive (in e.g. FAO it means being next to God), but meant that I was given an impressive title to be able to represent CIFOR at meetings to which the DG *Jeff Sayer* couldn't go.

CIFOR was expected to take part in everything. I had the age and possibly also the looks so I could fill such a role. But on the other hand I am hardly the chatterbox that is in an advantage in such circumstances. I was anyhow drawn into numerous meetings with FAO, IFF, IPCC, CPF and a number of other abbreviations. I was also out in the world trying to find money and that was a very good experience for an old donor representative. Often I had to listen to rubbish from ignorant donor representatives. Occasionally I worked with things I knew little about (e.g. the fires in Borneo in 1997/98). But I learnt. As I had worked with forest inventories some people also come to the conclusion that I was a specialist in remote sensing. During my years in CIFOR I also worked with fuelwood, efficiency of forestry assistance, climate issues etc. Some so-

called “papers” became the result. Before I joined CIFOR I didn’t know the importance of producing papers!

## CIFOR of today

From 2012 the Director General of CIFOR is the Swedish forester *Peter Holmgren*. From him I have got the following information about CIFOR today: CIFOR has now a budget of 46 million USD and has about 250 employees. If associates, doctoral students, visiting scientists and consultants are included the sum may go up to 400.

At the homepage of CIFOR the following major research themes are mentioned:
- Enhancing the role of forests in mitigating change
- Enhancing the role of forests in adapting to climate change
- Improving livelihoods through smallholder and community forestry
- Managing trade-offs between conservation and development at the landscape scale
- Managing impact of globalised trade and investment on forest and forest communities
- Sustainably managing tropical production forests

## Politics and traffic

The years I lived in Bogor were politically and climatically hot. When I arrived there in 1997 Sumatra and Borneo were in flames, the forests were burning and even Java was covered with smoke. The economic crisis in Asia was also hitting Indonesia. This made everything very cheap. President Suharto was governing with an iron fist since 30 years. Corruption in the top brass was utterly extensive to say the least. But after a year unrest started and Suharto was forced to leave. A new period of unrest followed, but the whole thing ended up in Indonesia becoming fairly democratic. This is a rather fantastic story. Corruption has on the other hand hardly diminished but has changed.

In 1980 I visited Indonesia for the first time and I found it to be something of a paradise. Then the Swedish forester *Nils Svanqvist* lived in a house among the rice fields 20 kilometers outside of Bogor. When I got back in 1997 everything had changed. Bogor and the area around Jakarta were drowned in traffic. Every day I had to sit two hours in a car for coming back and forth to my work. That was worse than in Stockholm. During weekends people with a car in Jakarta seemed to go to Bogor for a picnic. Everything was blocked. If I wanted to leave Bogor during weekends it was only possible on Saturday morning.

## Indonesia is a fantastic country to live in

A CGIAR institute as CIFOR is a good place to work at. Indonesia is also a fantastic country with a marvelous culture, wonderful nature and nice people, but the crowding makes it a hard place for a Värmlänning to live in. Most of the time I lived alone in Bogor and the weekends could be boring, so often I tried to leave the town. On the south coast there was a fishing village where I often went and there were also a number of volcanoes which I used to climb. There were certainly also a number national parks and bird watching areas which could be visited.When my family members were visiting longer expeditions were undertaken. Bali was a standard visit. The big adventure was perhaps a

visit to the island Flores. From Flores we went by bus over the islands Sumbawa, Lombok, Bali and Java all the way back to Bogor. Indonesia has many problems of a developing country but the worst problems are really the ones they share with the industrial world.

# Agroforestry education in Southeast Asia

*By Per Rudebjer, Technical Advisor at the World Agroforestry Centre (ICRAF) in Indonesia 1998-2003 and in Thailand 2003-2006*

## Southeast Asian universities joining forces to improve agroforestry education

That trees in agricultural landscapes are important is clear to an observant traveller in rural and peri-urban areas in Southeast Asia. Yet, such trees have until fairly recently received limited attention in agriculture and forestry education programmes and the roles they play for people and the environment are often overlooked. To tackle this problem, the Southeast Asia regional office of the World Agroforestry Centre (ICRAF) (1) in Bogor, Indonesia, became the hub for a decade-long Sida-supported initiative to improve agroforestry education in the region.

ICRAF's regional office is located at the headquarters of the Centre for International Forestry Research (CIFOR), south of Jakarta. The green campus is surrounded by patches of humid tropical forest, nurtured by Java's volcanic soils and nearly daily thunderstorms, and by rice fields fighting a losing battle to urban development in this amazingly densely populated place. Shortly after arriving in January 1998, I was sent to the Philippines to meet with *Dr Romulo Del Castillo*, Director of the Institute of Agroforestry at the University of the Philippines Los Baños (UPLB). *Dr Del Castillo*, or *Romy* as friends called him, was passionately involved in promoting agroforestry research and education in the Philippines and in Southeast Asia, and an advocate for getting it better recognized as a discipline and a career pathway. This visit was going to be followed by many more, as *Romy* become my closest collaborator.

In 1994 ICRAF and the Asia-Pacific Agroforestry Network (APAN), a FAO-led research network, had organized a roundtable discussion on agroforestry education in Southeast Asia, in Bogor. Among the participants was the African Network for Agroforestry Education (ANAFE)(2)[3], a network coordinated by ICRAF and supported by Sida since the early 1990s. In just a few years this network had successfully brought agroforestry teaching into the curricula of many forestry and agricultural universities and technical collages across Africa. The initiative contributed to making higher education more adapted to the realities of smallholder farmers and more in touch with the integrated land use that is so common in African agro-ecosystems.

Inspired by the African experiences and guided by the roundtable discussion, six universities in Indonesia, the Philippines and Thailand proposed a similar agroforestry education project in the Southeast Asia region. ICRAF submitted the proposal to Sida, which agreed to support a status and needs assessment of agroforestry education during 1998. I was hired by ICRAF to lead the study, which also would include Laos and Vietnam, two of Sweden's two long-term 'programme countries' in the region.

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1. The World Agroforestry Centre(ICRAF) is a CGIAR Consortium Research Centre with headquarters in Nairobi, Kenya, and five regional offices located in Cameroon, India, Indonesia, Kenya and Peru. ICRAFs mission is to generate science-based knowledge about diverse roles that trees play in agriculture landscapes, and to use its research to advance policies and practices, and their implementation, that benefit the poor and the environment.

2. Today an independent organization, renamed the African Network for Agriculture, Agroforestry and Natural Resources Education. ANAFE is still supported by Sida.

## Situation analysis of agroforestry education

In January 1998 the Asian financial crisis was shaking the Southeast Asia region. In Indonesia, the rupiah had just depreciated by some 80% and the country was rescuing failing banks and coping with shrinking GDP and fleeing investors. The crisis was shaking Thailand and the Philippines and several other Southeast Asian nations as well. The timing for a new regional agroforestry education initiative could certainly have been better.

So, in the middle of the financial crisis, we set to work. In each of the five countries, we recruited an Education Fellow to coordinate a national study on the status of and needs for agroforestry education. The Fellows presented their country reports at a regional workshop held in Bogor in August 1998, and after an analysis of the findings the following issues were identified:

- Universities and colleges in the region had common areas of needs and experiences, but very limited mechanisms for collaboration.
- Curricula were inadequate or out-dated, and there were obstacles to agroforestry curriculum development.
- Lecturers required further training for effective teaching, and continuous technical updates to benefit from recent developments in agroforestry research.
- There was a general shortage of relevant and high-quality training materials, including textbooks, manuals, and case studies, and existing materials needed translation.
- Universities had inadequate human and material resources to develop research capacity in agroforestry, particularly at graduate level.
- There had not been a systematic survey of education and training needs in agroforestry.
- Agroforestry was yet to be recognized as a field of specialization in many schools.
- There were no specific government job areas in agroforestry.

## Sida supports the creation of SEANAFE

The workshop advised that the creation of a regional network would be an appropriate strategy to address these issues. Accordingly, a 4-year project proposal was submitted to Sida and swiftly approved for a support of 11,6 mSEK. The Southeast Asian Network for Agroforestry Education (SEANAFE) started in 1999. At ICRAF, I became the network's Technical Advisor and manager of the Sida grant. An additional duty was to share ICRAF´s agroforestry research results with the region´s universities. I was stationed at ICRAF-Indonesia during 1998–2003 and at ICRAF-Thailand from 2003 to 2006. In 2006 my duties were taken over by *Dr Jess C. Fernandez* from the Philippines.

## The objectives of SEANAFE

The following SEANAFE's objectives were agreed upon:

- Provide regional and national mechanisms for interdisciplinary collaboration among agroforestry institutions and programmes.
- Build individual and institutional capacity for agroforestry education, research and development.
- Strengthen the quality, availability and accessibility of agroforestry education.
- Facilitate research connectivity and collaboration.
- Link agroforestry education to the extension system and practice in the field.
- Promote and develop skills in communication and information dissemination.
- Assist in mobilizing resources for national and regional collaboration on agroforestry capacity building.

## Synergies in Vietnam

SEANAFE was not the only education initiative the region. In Vietnam, the Swiss-funded Social Forestry Support Programme (SFSP) was working with six Vietnamese forestry universities, and SFSP became a natural partner. The programme used participatory curriculum development and learner-centred teaching methods to modernize curricula and to introduce new courses

SEANAFE added agroforestry to the list of new courses being developed in Vietnam. At the same time, SEANAFE could share the participatory curriculum development approach pioneered in Vietnam with other countries in Southeast Asia. This fruitful collaboration with SFSP's education specialist, *Dr Peter Taylor*, resulted in a series of joint publications on curriculum development in general and agroforestry curricula in particular. And after office hours the partnership continued when Peter invited me to bring my violin and join the sessions of The Social Weevils, his traditional Irish band that regularly performed in Hanoi.

## Decentralizing the network´s management

A mid-term review of the Sida project in 2001 noted that 'considerable progress had been made', but also that 'the centralised structure of the network seemed to be a constraint for further growth and for cost-effectiveness'. The review team, which reported their findings to the SEANAFE Board, recommended to decentralize the network's management and to create national networks in the member countries. In the longer perspective, the network should also seek to focus on specific themes to maintain a sense of vigour and innovativeness.

During 2001 and 2002, national networks on agroforestry education were formed in Indonesia, Laos, the Philippines, Thailand and Vietnam. Each network was given a small start-up capital through the Sida grant, to support essential meetings, a small secretariat function and a range of activities on curriculum development, teaching materials production and translation, thesis research and so on. In this way, the network became more agile and could better meet the specific needs of each country, while still sharing experiences regionally through the SEANAFE Board and General Meetings. This decentralized structure also allowed Malaysia to join SEANAFE in 2008, using its own funds.

## A bridging grant from Sida

When the 4-year project ended in 2002, the question facing Sida was what to do next. Changing education can be a lengthy process that depends not only on the university, but also on the external environment. The pace of change can be very different from one university to another, and a long view is needed, as Sida's and ICRAF's experiences in Africa had showed. Still, Sida hesitated to continue supporting SEANAFE, but eventually provided a final 'bridging grant' for 2003 and 2004 (the new grant was merged with another Sida-supported project: 'strengthen agroforestry research in Laos and Vietnam'). This allowed the national agroforestry education networks to keep their momentum and continue what had recently started, but SENAFE's long-term support was still not secured.

## A second phase of the Project after all

Sida evaluated the project in late 2004[4]. The recommendation to Sida was to reconsider its decision to terminate the financial support to SEANAFE, arguing that dropping the support now would result in 'poor use of resources invested so far'. The national networks, on the other hand were recommended to reduce donor dependency and follow the example from the Philippines by securing additional funds from other sources.

The result of this dialogue was that Sida, after all, agreed to support SEANAFE for a second phase. The new grant, from April 2005 to March 2009, was intended to prepare the networks for a future without, or with a lower level, of direct donor funding. Some key objectives were:

- The development of a core group of instructors able to teach the two thematic projects: 'marketing of agroforestry tree products', and the concept of 'landscape agroforestry'
- The mobilization of additional funding for regional and national projects
- The expansion of SEANAFE to include China, Malaysia and other Southeast Asian nations and the development of partnerships with regional organizations such as the Centre for People and Forests (RECOFTC) in Thailand.

SEANAFE designed the two thematic projects around national case studies to document experiences central to the themes, to share lessons between countries, and to provide learning materials for new courses. National teams were recruited in each country to lead the projects. Using a training of trainers approach, the national teams attended a regional training course , which they then replicated for lecturers in their own national networks. Around 100 lectures were trained in each of the two themes, and a range of training materials were produced and translated to the local languages of instruction. One achievement was also the organization of an International Agroforestry Education Conference in Chiang Mai in Thailand in October 2007.

But broadening the financial base proved to be more challenging; donors are usually not keen on taking over projects from others! When Sida's support ended in 2009, SEANAFE was left without external donor funding.

[4] Sida Evaluation 05/13

**Developments after Sida's support ended**

I recently, in 2014, had the opportunity to re-connect with former SEANAFE partners in both Vietnam and Thailand, and I was very pleased to learn that the networks are still intact, five years after Sida's support ended, although at a lower activity level.

For example, in 2011, SEANAFE's six national networks were called upon to help implement a project to train young lecturers in climate change response; a project under the Asia-Pacific Network for Global Change Research. In the Philippines the national network with 35 members is quite active, chaired by the current Director of the Institute for Agroforestry at UPLB.

In Indonesia, a collaborative agreement was signed on May 7, 2014 by four institutes working in agroforestry in Indonesia, one of which was the Indonesian Network for Agroforestry Education (INAFE). The agreement expressed the intent of the four institutes to strengthen cooperation in enhancing agroforestry research, education and development in Indonesia, in accordance with the Government's forestry development policies and the national agroforestry research strategy.

So the SEANAFE-led process to improve higher education in agroforestry in Southeast Asia that started thanks to Sida's support in the late 1990s still continues. Today's issues such as adaptation to climate change, landscape restoration or value chain upgrading are new challenges for SEANAFE and for a new generation of agriculture and forestry graduates getting ready to manage the region's multi-functional agroforestry landscapes.

Peat forest cleared for cultivation in Central Kalimantan, Indonesia (Photo Anders Malmer)

## IKEA forestry activities in Asia

*This text has been written by Sten Norén based on information from Anders Hildeman, Forestry Manager at IKEA of Sweden since 2009, who has adjusted and approved it/SN.*

### IKEA's products are based on wood

IKEA (Ingvar Kamprad Elmtaryd Agunnaryd) is a company that produces and sells home furnishing products worldwide. Most part of the furniture is made of wood or wood based materials. IKEA is therefore depending good and reliable suppliers of wood. In the beginning IKEA bought furniture from Swedish companies and the wood mainly originated in Sweden. In order to continue to provide products at competitive prices, IKEA expanded it purchasing abroad, initially mainly to Poland. Today (2013) Poland is the largest supplier of wood for IKEA products IKEA, 3.2 milj.m3 of Round Wood Equivalents (RWE) per year (23 %) of a total of 14 million m3, while "only" 1 million. m3 (8%) is sourced from Sweden. Russia, Lithuania and Germany (representing around 7% each) come next on a list of totally around 50 wood supplying countries.

IKEA's aim is to provide functional and well designed home furnishing products at a price that makes them affordable also for people with thin wallets. IKEA therefore early started sourcing globally and expanded the purchasing to Asia. As IKEA expanded into new markets, new wood species have been introduced in the range. In order to avoid sourcing illegally logged wood or wood from controversial sources IKEA decided to implement a control system.

In 1998 IKEA therefore started to develop a system for control the wood sourced for IKEA products and recruited team of 10 Swedish forest officers to be stationed in various countries in Europe and Asia. The responsibility of the forestry team is to control the purchasing of wood, verify from the origin of the wood, and manage the interaction with government authorities, as well as with companies and organisations involved in the timber trade business. This involves extensive travel, field visits and auditing of supply chains. They are IKEA's representatives in the development and partnership projects to promote better forest management described below. The global forestry team today consists of 20 co-workers of 9 nationalities of which 17 have master's degrees in forestry. IKEA currently has 2 Swedish foresters employed in the forestry team, of which 1 is stationed in Asian countries.

In both Asia and Latin America the wood originates almost exclusively from plantation forestry. There has been limited sourcing in Latin American countries. No high value tropical species are currently used in the IKEA range. This is a factor that contributes substantially to reducing the risk of sourcing controversial wood.

### Cooperation with WWF

In many parts of the world it is not enough to demand wood from responsible forest manage. There is a need for companies to contribute to this development. In order demonstrate its commitment to sustainable forest management in the areas IKEA sources wood, a co-operation with the World Wildlife Fund (WWF) was initiated in 2002. This partnership is focussed in areas where IKEA and WWF have identified sustainability challenges and where the organisations believe they can achieve more working together. IKEA also participates in the WWF Global Forest and Trade Network (GFTN), a WWF

initiative to combat illegal logging and drive improvements in forest management. Participants are committed to promote responsible forestry to secure forest values for both present and future needs and encourage credible certification, e.g. through Forest Stewardship Council (FSC). Under these umbrellas IKEA and WWF run a 8 projects in 11 different countries, including Russia, China, Indonesia and the Greater Mekong area.

**China**

In China, which annually supplies IKEA with around 700 000 m3 RWE of wood, the project aims to support responsible forest management and legal trade. It provides support to forest management planning and to the development of a national FSC standard. In 2004 the first State Forest Area was certified and the FSC-certified area in the country is now approaching three million hectares, of which the project has contributed to the certification of close to 80%. A co-operation has been established with the Chinese and Russian customs in order to combat illegal logging. In China there are also longstanding co-operations with the State Forest Administration and the Chinese Academy of Forestry.

**Vietnam**

The sourcing of wood for IKEA is around 350 000 m3/year. The project is promoting responsible forest management and restoration in the Central Annamite Mountains. The focus is to increase the capacity of Vietnamese companies to effectively meet the requirements on timber legality, to drive FSC and Controlled Wood Certification of Acacia plantations and to revise the provincial forest strategies and forest restoration plans. A gap analysis on timber legality requirement has been performed for Rattan and Acacia suppliers.

**Laos, Cambodia &Vietnam**

The goal of this project is to support a sustainable Rattan industry in the greater Mekong Region. While conserving natural forests, the project will contribute to sustainable management and trade, as well as to poverty alleviation. This involves all actors in the Rattan value chain such as communities, governments, traders and processors. It is a unique project as it aims to put in place the very first FSC certificate system for rattan products.

In Laos and Cambodia Rattan nurseries have been constructed. A community based Rattan management and production model has been developed. In Cambodia the first Rattan species field guide has been launched. 80 of the 100 villages in the project have their Village Rattan Producer Group set-up. Out of these groups, 43 villages have developed business plans and started handicraft production.

**Sabah, Malaysia**

In 1998, on initiative from its owner *Ingvar Kamprad*, IKEA started a large scale programme for rehabilitation of rainforests, damaged by wildfires. The programme was named “Sow a seed” and was established jointly with the Malaysian “Sabah Foundation”

and some departments of the Forest Faculty of SLU in Umeå, which had been making research here since 1986. Since the start more than 12 000 ha of rainforests have been rehabilitated through enrichment planting of native rainforest species. The “Family Kamprad Foundation” connected to IKEA has recently decided to continue support to this programme up to 2023.

Shifting cultivation in Vietnam (Photo Anders Malmer)

# Community Forestry in Nepal

*By Mårten Bendz, Chief Technical Adviser for FAO, in Nepal 1989-92*
*and Sten Norén, Training and Extension Specialist for FAO/DANIDA, in Nepal 1989-91*

## The new paradigm"Forestry for people"

The World Forestry Congress in Jakarta, Indonesia, in 1978 meant a break through for a new paradigm in forestry development in the world. The new paradigm meant a shift from seeing trees and forests mainly as raw-material for forest industries towards a better understanding of the importance of trees and forests for all people in rural areas. The theme of the Conference was "Forestry for people" and a key speech was given by the Deputy Head of Forest Department of FAO, *Jack Westoby*, entitled"Forest industries for socio-economic development". About the same time started the SIDA-supported FAO-programme "Forestry for Local Community Development, FLCD", from 1987 followed by the programme "Forest, Trees and People, FTP",which ended year 2000. Both these programmes were very instrumental in spreading the concept all over the world. The concept got different names such as Community Forestry, Village Forestry, Social Forestry etc.

Nepal was one of the first countries to take up the new concept. All forests in the country had been nationalised in the 1950´s, but that did not stop forest destruction by the local people. By 1980 the Government realised that it had to cooperate more with the people and started a programme by which particularly degraded forests in the hill areas were handed over to the smallest administrative unit, the Panchayats. The Panchayats got support to start forest nurseries and to plant trees. This Programme was supported by a World Bank/UNDP/FAO-project called Community Forestry Development Project, phase I, CFDP I. It was fairly successful in establishing nurseries and plantations in the 29 hill districts in which it operated. Several Swedish foresters took part in that Project as Associate Experts with FAO, e.g. *Jerker Thunberg, Marit Werner, Bo Tengnäs, Per Olsson* and *Hans Olsson.*

## The User Group Strategy is formed in Nepal

However, by late 1980´s the Government realised that even a Panchayat was too big a unit for the people to feel really involved in the forest operations. Based on this understanding, and experience from some other forestry projects run with Australian, Swiss and Brittish support, the Government decided to adjust the approach so that almost all forests in the hill areas, not only degraded forests, should be given to the actual users. These users were to form User Groups with the task to manage the forests in cooperation with the staff of the Forest Department. This rather radical idea became the most important strategy and programme in the Master Plan for the Forestry Sector (MPFS) of Nepal, developed 1986-89 by help of Finnish support, and approved by the Government in April 1989.

The Community Forestry Development Division (CFDD) in the Ministry of Forests and Soil Conservation had the overall responsibility for Community Forestry in all the 75 Districts of Nepal. It was supported by the UNDP/FAO-project CFDP, phase II, working in 37 districts, a World Bank–project giving loans to forest plantation by User Groups and a Danish project for Forestry Training. Five volunteer organisations were also

involved (from USA, UK, Germany, Denmark, Japan). In May 1989 *Mårten Bendz* as Chief Technical Adviser, CTA, of FAO, and *Sten Norén* as Training and Extension Specialist, also FAO, started working in CFDP II and by that started the new phase of the Project.

**Difficulties in project implementation**

The project, CFDP II, had to struggle with a number of obstacles which were not really foreseen in the Project Document. Problems successively identified were:

- Foretsry staff disliked handing over forests from the Government to Forest User Groups (FUG) as this activity did in fact threaten their jobs. Without forests to manage and protect there would be less need for a state forest service and staff in the long run; they would become advisors rather than executors.

- FUGs reluctance to take responsibility over a natural resource which had been for long time"forbidden areas". Their reluctance included two aspects:

- A mental blockage in cooperating with, and trusting, local Government staff which for long times had been seen as enemies.

- The traditional "tragedy of the commons". With no tenure safety linked with the handed-over forestry areas, local people tended to do as earlier: make use of available resources. Overcutting of trees and overgrazing of pasture could not be stopped overnight.

- Local democracy was not easily introduced in a culture which had for generations been ruled from the top by a reigning King.

- Administrative and political powers were not in the hands of governmental structures but instead with the King and a handful of influential families.

- Resources given to local structures with little experience of management and governing rules or laws can easily lead to corruption. This has happened in several cases of FUG forests, particularly in the Terai, the lowlands in south Nepal near India, where wood values are high.

These mainly institutional obstacles were present and slowed down project implementation. The Project Document identified important project activities and set goals for training of staff, for handing over of land areas, for the production of seedlings etc. Such goals could be worked with, and perhaps met, but the Project Document did not recognize that many obstacles were of a cultural and structural nature. But, of course, no UN- or UNDP- or FAO- project could be designed to change a culture!

**Reorientation of forestry staff**

In order to be able to carry out the User Group-strategy all forestry staff would have to change their way of working with, and attitudes towards, the local people in the rural

areas. They were in most cases used to see the people as enemies of the forests and now they should cooperate with them and give them the responsibility to manage the forests! In a deeper sense: the Forest Organisation had to be more democratic. The foresters needed to be reoriented toward a new way of thinking and new behaviour.

There was some experience of such reorientation available in the country within some other forestry projects. The Project hired a local consultant, *Dr Kaji Shresta*, who had for other Community Forestry Projects developed a model of Reorientation Workshops for District Forest Officers (DFO) and their Rangers together. The training of these two categories together was however new to them. The method was based on the principle "Learning by Reflection on Experience". It is a participatory method whereby the participants get many questions on how they are working and asked to reflect upon if they can change their way of thinking and behaviour. The leader of such a workshop is more of a facilitator than just a teacher. The main objective of the training was that the Rangers should use the same methodology when they were to approach the local people, to talk and convince people rather than just giving orders or advice.

The Project managed in November-December 1989 to hold such a 2-week reorientation workshop with the forestry staff of Okhaldunga District, followed by one week of work with the people in the District. The workshop was very successful, the staff had really understood that they should approach the people in an modest and humble way. Unfortunately the Project was not allowed to utilize the services of *Dr Shresta* any more after that. Probably his method to make people reflect and think was regarded as somewhat dangerous, even revolutionary, by the Ministry staff.

**Other activities of CFDP II**

The Project managed to run a few more Reorientation workshops using DFO:s who had been reoriented in other projects, e.g. the Australian Community Forestry Project, as facilitators. The Project also held a number of other seminars and courses to promote the User Group-concept, made brochures and a News Letter, held radio programmes etc. The Danish project built up five Regional Training Centres which were run by DANIDA-recruited experts who started to arrive early 1991.

**Result by 2012**

CFDP II terminated in 1992. The 5$^{th}$ Community Forestry workshop in Nepal was held 2004 providing a follow-up and also commemorating 25 years of community forestry in the country. At that occasion the hand-over progress was reported. It was noted that by that time 25% of the national forests had been handed over to 35 % of the population of Nepal.

Reports from the Community Forestry Department show that in 2012 the situation was as follows:

- About 1.65 mill.hectares have now been handed over from the Government to 17 700 FUGs.

- The average area of forest land per FUG is 157 ha (Terai), 77 ha (hills) and 84 ha (mountain)

- The total annual FUG income from sale of forerst products is some 760 mill. rupees.
- Annual income per FUG is 29 000 rupees in Terai and 536 rupees in the hill tracts

- Expenses in FUGs are mainly for watchers, forest management, training, FUG offices, school support, FUG staff salary (some FUGs have now appointed rangers) and road construction. It is said that CF has significantly contributed to improve life conditions in many rural areas.

We have over the years been in contact with several former colleagues and project staff members. Based on their informal reports the following can be concluded:

The momentum of the CF campaign is slow and dwindling at this time. This is particularly so in the Terai, where FUG committee members are involved in Sal (a valuable tree species) harvest operations outside operational plans, in some cases together with Forest Department staff – it is reported. Such cases are also reported from some hill areas where trees have high commercial values.

In 2010 the Government tried to amend the law and limit the FUG jurisdiction, but FECOFUN (which is the national federation of FUGs) protested strongly. Among other activities they blocked the Forest Department complex and roads at Babarmahal for a couple of days. FECOFUN, which is politically left oriented, seems to be stronger than the Forest Department, as it has close links with parliament members. CF now seems to play a vital role in local politics and there is strong competition to become the chairperson of the CF committee. It is often seen that a CF chair leads to the Village chair and thereby the FUG has become a springboard for people with political ambitions.

**The final conclusion is that although CF has taken a big momentum and can report many hectares of handed-over areas, and also has created certain political powers, it seems that there is little forest management and forest conservation going on in the forest areas of the country. The production and productivity of the forests is reported as low. FUGs contribution to local community development is still low, and the FUGs ambitions to invest in new forests and increase production and income could be much higher.**

## Forestry extension in ten provinces of China

*By Gustav Fredriksson, Forestry Consultant in China 1985-86*

### Ten pilot extension centers supported by World bank/Sweden

The World Bank financed China Forestry Development Project included reforming forestry extension in ten provinces of China. The Government of the People´s Republic of China was giving emphasis to forestry extension services. The Ministry of Forestry announced plans to set up a national network of forestry extension centers in the Ministry of Forestry and at provincial, prefectural and county levels. The World Bank project supported construction, equipping and planning of ten pilot extension centers; one extension center at provincial level in Gansu Province, one extension center at prefectural level in Shandong province , eight extension centers at county level in Fujian, Hebei, Henan, Hubei, Hunan, Liaoning, Sichuan and Zhejiang provinces.

The Chinese Ministry of Forestry and the Swedish Pulp and Paper Association (SCPF) reached an agreement on cooperation in forestry extension. SCPF supported Ministry of Forestry in the initial phase of the project with consultancy in forestry extension development. Gustav Fredriksson, county chief forester of Blekinge, was employed by SCPF as consultant during approximately one year. Counterpart from the Chinese Ministry of Forestry was *Mr. Li Zhongxuan,* Chief of Research Results and Extension Division.

### Terms of Reference for the Swedish consultancy

The Terms of Reference (ToR) for the consultancy were set up as follows:

1. To assist in planning and organizing extension services in ten pilot areas
2. To assist in planning the ten extension centers, including design, equipment and work programs
3. To assist in developing aids for training of forestry staff and for extension services
4. To propose alternative methods of extension
5. To propose techniques for monitoring and evaluation of forestry extension programs.

The China-Sweden extension project started in October 1985 with a study tour for 15 days in Sweden. The Chinese group of 12 delegates comprised of representatives for the ten pilot extension centers headed by *Mr. Li Zhongxuan*. The project continued with two longer missions to the places and areas for the ten extensions centers during November - December 1985 and February – March 1986. Final discussions in the Chinese Ministry of Forestry and with World Bank representatives were held in Beijing in May 1986. As a follow up of the project a two weeks training in forestry extension was carried through October-November 1988 in Guangzhou for forest extension officers on provincial level and at the ten extension centers. Leaders of this training course were *Herbert Davidsson* from University of Uppsala and *Gustav Fredriksson*.

The consultancy report on ToR points 1 and 2 was worked out for implementation in compliance with extension plans and equipment lists by the World Bank China Forestry Development Project. The report on points 3, 4 and 5 were indicative and served as general recommendations for further development of forestry extension within the World Bank China Forestry Development Project.

**Main results**

The main results of the project were summarized in the following two parts:

*1. General recommendations on the organization and development of extension service in China.*

These recommendations focused on:

- Popularizing forestry science and technology,
- Organizing of extension service on different administrative levels of China,
- Extension methods, aids for extension and training,
- Demonstration areas and model forests,
- Evaluation and monitoring of extension service and training of forestry extension staff.

*2. Special recommendations for the ten pilot forestry extension centers.*

For each pilot forestry extension center was recommended:

- An organization outline,
- Buildings for office and training,
- Main objectives in the five year plan,
- Extension plan for the first year after the project,
- Equipment for extension service.

Finally in the project report was recommended further cooperation with Sweden in the field of forestry extension especially training in different subjects and study tours to Sweden and other countries. Only the training course in Guangzhou in October-November 1988 could be realized. The political development in China during 1989 stopped for some years all other plans for continued cooperation between China and Sweden.

# Soil Conservation Project in Central China

*By Sten Norén, forestry consultant at IRDC, SLU, 1980 -1994*

## The erosion of the Loess Plateau

The Loess Plateau in Central China covers an area of 530 000 km2, bigger than the whole of Sweden, and consists of 50-200m thick layers of silty loam transported from the Gobi deserts in northwest during millions of years. It is a fertile soil and was the basis for the first kingdom in China already 1 600 BC. It was also the centre of the kingdom of Qin, 249-206 BC, from where the king Qin Shi Huangdi united most of China, became the first Emperor of China , started to build the Chinese Wall against the Mongoles and had his tomb surrounded by 6 000 claysoldiers in full size made outside his capital city Xian.

However, this early civilisation also meant a quick destruction of the forests which covered the Loess Plateau and people started till and graze the land, resulting in enormous erosion of the erosive soil in the hilly area, over 100 tons/ha per year. The Yellow River, which flows through the area, receives most of this silt and transports it into the plains in the east, making them fertile through frequent flooding. But these floods also cause problems for people living there. The river is silted so it flows 8–10m higher than surrounding plains. The river has become embedded between high walls, but sometimes these walls are destroyed and vast plain areas are flooded. To make research on how to fight against the erosion in the hills the Chinese Government in 1979 started the Shaanxi Research Institute for the Loess Plateau Control (SRILPC) in the town of Mizhi in northern Shaanxi Province.

## The start of the Project

To this Institute one Director of SIDA, *Lars-Olof Edström*, came one day in 1985 and was asked if Sweden could assist the research at the Institute. SIDA asked SLU to send a fact-finding Mission, and in December 1985 *Dr Nils Nyqvist*, Professor in Forest Soil Science, and *Mr Sten Norén*, Forestry Consultant at IRDC went to Mizhi. In next step Chinese researchers from SRILPC visited Sweden and SLU in May 1886. In September 1986 a Project Identification Mission consisting of researchers from five different Departments of two Faculties of SLU was launched. The members were:

*Professor Jan Persson*, Department of Soil Science, Ultuna
*Professor Hans Wiktorsson*, Dep. of Animal Nutrition and Management, Ultuna
*Dr Stig Ledin*, Dep. of Ecology and Evironmental Research, Ultuna
*Dr Barbro Bjurman*, Dep.of Horticultural Sciencies, Alnarp
*Mr Ove Emteryd*. Dep.of Forest Site Research, Umeå

The Mission was led by *Mr Sten Norén*, International Rural Development Centre, IRDC, Ultuna and as secretary served *Ms Catharina Wollert*, IRDC.

After six days of field visits and intense discussions the Mission agreed with the Chinese researchers on a Cooperation Programme consisting of four Sub-projects with clear reference to soil conservation.

**The four sub-projects**

**1.** ***Development of Simple soil testing techniques*** **(**Dept.of Forest Site Research)
The aim was to strengthen the existing Laboratory at Mizhi with some equipment and chemicals, develop some simple soil testing techniques and to make some pilot studies and training of staff.

**2.** ***Biological soil improvement experiments*** (Dept. of Soil Science)
The loess soil has a low content of organic material, so experiments should be done on the use of animal manure and fertilizers to improve the soil, test nitrogen fixation by legumes, to determine effects of different nitrogen fertilizers etc.

**3.** ***Experiments on fruit and forage production for soil conservation (agroforestry)***
(Dept.of Horticulture Sciencies and Dept.of Animal Husbandry and Management.)
This Project contained experiments on intercropping fruit trees, forage crops and broom grass and digestibility studies on sheep of various fodder crops.

**4.** ***Energy forest trials with multi-purpose species*** (Dept. of Ecology and Environment Research)
The aim was to investigate the suitability of six tree-species for erosion control on steep slopes and for production of fuelwood, forage, green manure and construction wood.

It was agreed that the experiments should be made at SRILCP under supervision of representatives from the various departments of SLU on short term consultancy visits, totally 12 consultancies of together 13 months. Chinese researcher would get fellowships for shorter studies at SLU, totally 14 fellowships of together 27.5 months.

The project period was to be 3 years and with a total budget of Swedish cost of 3 million SEK. Local cost in China should be born by SRILCP. Funds would be taken from SIDA:s Special Programme for Soil Conservation.

**Study tour from Africa**

It was also agreed that the Project would include a study tour to the Loess Plateau by participants from African countries in which SIDA supported soil conservation projects. Thus in September 1988, 21 persons from Ethiopia, Kenya, Tanzania and Zambia came to Mizhi to learn what was done at SRILCP. All the participants were actively working in soil conservation project at home. The tour was led by *Dr Lisa Sennerby Forsse* and *Mrs Inger Ledin,* Dep. of Ecology of SLU.

The tour gave good opportunities for exchange of views and experience on the subject matter. Particularly was noted the need for biological control rather than engineering control, the necessity of improved transferability of results and the continued need for research on soil conservation both in China and Africa.

**Final Evaluation Mission in 1990**

The Project went on well according to the plans. Due to unexpected political turbulences in China in June 1989, (demonstrations on Tiamen Square), the project activities almost stopped during one year. The project was however extended to December 1990 with an additional budget of around 1 million SEK, which allowed most of the planned activities to be carried out

In August –September 1990 an Evaluation Mission took place. The Swedish members from SLU were:
*Professor Nils Nyqvist*. Dep.of Forest Site Research,
*Mr Johan Toborn*, IRDC
*Ms Katarina Toborn*, IRDC, secretary
The Chinese side supplied 3 full members, 3 observers and 1 resource person.

On ***sub-project 1*** the Mission found that the Laboratory was now well equipped and managed, more types of analysis than originally planned had been made and advances had been made in simple field testing techniques.

On ***sub-project 2*** the Mission found that experiments had shown that increase in yield can be expected by inoculating legumes and that manure and compost were more beneficial in raising soil organic matter than maize and legume residues. Contrary to the original philosophy to improve production through enhancement of organic matter level in the soil, the shorter term expediency of applying chemical fertilizers has unfortunately come to dominate the experiments.

On ***sub-project 3*** experiments had found that yield and also the digestible protein content of alfalfa and broom grass together was higher than for pure alfalfa, but the mixture markedly reduced the growth of the fruit trees and also the soil water content. Howevwe, the sub-project had not managed to solve the inherent competition between fruit trees, fodder crops and soil conservation using the same unit of land.

On ***sub-project 4*** the results were few due to the long rotation period. However, *Robinia pseudoacacia* showed outstanding in growth with a mean height of almost 2 m two years after plantation. Survival of Salix plants was very poor and this species does not seem to fit the environment on the site.

**The Mission concluded that this modestly-funded research project has contributed to substantial upgrading of individual and institutional competence of SRILCP. Also researcher at SLU has benefited and an almost unique cooperation between different departments of SLU had taken place. The mission recommended a prolongation of the Project with more emphasis on on-farm research and building up of a farming systems research capability at the Institute. However, SIDA decided to discontinue the Project.**

Kids bringing water from the forest to the village in Laos (Photo Anders Malmer)

# A Swedish forester in Burma

*By Bengt Frykman, Extension Advisor for FAO, in Burma 1992-93*

## Forests in Burma (Myanmar)

Burma has a total land area of around 680 000 km2, which is around 1½ times Sweden. The population of about 42.3 million live mainly on the plains, along the principal rivers and deltas. Closed and degraded forests cover 50.8 % of the country, which corresponds to 34 million ha. These forests are owned by the State.

From 1985 the governmental tree planting programme is fixed to about 80.000 acres, or 40 000 ha annually. In addition Forest Department has been distributing around 4.5 million seedlings annually free to local communities and governmental organisations to raise woodlots and for planting under various agroforestry systems. In 1991 the plantation establishment covered about 425.000 hectares of which 45 % were teak plantations.

Some 23 % of the forests are affected by some 2.5 million shifting cultivators Some 1.7 million ha of Local Supply Reserves, which supply fuelwood and small timber to local communities, are seriously impaired due to overcutting, lack of management and treatment and extension services.

## Objectives of the extension component of the UNDP/FAO Project

In a Technical Project Review Meeting in 1991 it was recommended and approved by UNDP to add a forestry extension component to the UNDP /FAO funded Project MYA/85/003: National Forest and Management and Inventory.

Thus FAO recruited a Swedish Expert *Bengt Frykman* to serve the projects extension component. The Overall Development Objective was the ”Establishment of a forestry extension capability within the Myanmar Forest Department.”

Immediate objective 1:”Assist the Forest Department to establish a Forestry Extension Organization and to formulate appropriate policies”

Immediate objective 2:”Enhance forestry extension capabilities of Forest Department to plan and implement extension programmes at different levels.”

I took up my assignment in Myanmar 21.10 1992 after briefing at FAO Hqs in Rome. I was placed at the project office of MYA/85/003 at the Myanmar Forest Department site in Yangon. My counterpart assigned was *U Than Htun* who had attended an extension training course in Thailand.

**Main achievements**

The main achievements during the one year assignment were:

- A Forestry Extension Division was approved by the Minister of Forestry.

- Training of staff at the field level in combination with their participation in preparing village forestry plans has shown to be a useful method to increase the motivation and skill of the staff to work with rural communities.

- Two pilot studies carried out in the Magway Township have shown a big interest among the villagers to plant more trees in their homesteads and around their farmlots.

- A model for village forestry was established. (This model has been presented in an article in IRDC Currents no 10, 1995, p32-36 ”Introduction of microplanning in forestry projects in Myanmar and Vietnam”)

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- Extension training packages for Forest Department personnel at different levels were prepared included a collection of 200 titles of documents in a data base, handout, videotapes and transparencies.

- A quantitative assessment of trained manpower requirements for a 5 year period was made and presented in a strategy-meeting for Forest Department 2 days in May 1993.

- The proposed definition of extension by the expert as being:”a two-way communication system with the active participation of target groups in planning, implementation, monitoring and evaluation of developing activities” was endorsed by the Forest Department meeting in May 1993. It was however recognised that forestry extension must also cover traditional extension approaches, such as education and awareness rising of different target groups in particular in connection with environment protection and conservation.

**How is it to work in Burma?**

You must always take into consideration the power of the military regime. For example, if you had planned a field trip with your counterpart, you often had to postpone it due to other orders from the Forest Minister. Staff of the Forest Department was easy to work with due to their good knowledge in English. Many of them were professionally good foresters. Some of them had really big difficulties to accept the Ministers ideas, but were forced to follow them. The Minister decided much in detail what the staff should do. The Director General was more a “figure head”.

When working in the field you first had to report to the military leader of the District before you could start working with local foresters. Under the surface one could feel the hatred against the regime. My work was particularly sensitive as the aim was to increase people´s participation in the forest activities. The respons from both village people and field staff was mainly positive. The difficulties were foremost in the contacts with bureaucrats at the UNDP- and FAO-offices.

## From Associate Expert in Nepal to Advisor in Afghanistan

*By Per Olsson, Senior Technical Adviser, in Afghanistan 2006 – present*

**My career as a forestry and rural development expert in developing countries.**

My international career started as an Associate Expert with FAO in a community forestry project in Nepal 1982-84.

My following assignments abroad were:

- 1985-88, *Laos* for Silvi Nova as Silviculture Adviser
- 1988–91, *Guinea-Bissau* for Terra Nova as Forestry Specialist
- 1993–95, *Pakistan* for World Bank as Team Leader
- 1995-97, *Philippines* for European Commission (EC) as Environmental Specialist
- 1997-99, *Vietnam* for the Directorate for International Cooperation, Netherlands, as Chief Technical Adviser
- 2000-03, *Pakistan* for EC as Co-Director
- 2004-05, *Afghanistan* for Relief International as Director of Programmes
- 2005-06, *East Timor* for UNOPS as Programme Management Specialist
- 2006-present, *Afghanistan* for various organiasations and in shifting positions.

My duties have shifted gradually from advisory roles in natural resource management to programme management and team leading of technical assistance in the rural development, watershed management and institutional strengthening fields. In my short term missions with the World Bank (Pakistan 1995), with EC (Philippines 1997) and with ADB (Pakistan 2000). I have formulated, monitored and evaluated projects and programmes. I have worked for UN agencies, consultancy films, development banks, agricultural universities and NGOs.

Hallersrum village in Vimmerby municipality in Sweden is my home base, where I manage an agricultural estate with commercial forestry operations, hunting and cray fishing.The summing up of an ongoing project below illustrates a typical job of mine. I am since 2008 working with the NGO Swedish Committee for Afghanistan (SCA).

**Northern Rural Project in Afghanistan**

Construction of village roads and bridges**,** repair and construction of buildings for education and health services, establishment of drinking water supply, repair of irrigation assets and capacity building of civil society. Those are some of the expected interventions of the Northern Rural Project (NRP). Sida finances this project, and SCA implements it together with local communities.

NRP contributes to development of five districts in the northern provinces of Balkh and Samangan, by responding to assistance proposals from 150 Community Development Councils (CDCs). NRP follows principles similar to the National Solidarity Programme and is complementary to it. The development goal for NRP is to strengthen the rural civil society by means of community mobilization and short term financing.

The budget provided by Sida is around 34 million SEK for the whole 36 month project period. The CDCs contribute to sub-project costs at a level of 10 %.

SCA established the project office in Mazar-i-Sharif and field operations got started in the first districts in mid 2011. The population in these districts lives in rural areas and derives its livelihood mainly from agriculture. The lack of employment opportunities is severe and the development needs are enormous.

SCA mobilizes CDCs to participate, and go on to train the CDCs in preparation of proposals for sub-projects, management and monitoring of sub-projects, and maintenance of the assets created after sub-project completion. The Proposal Reviewing Committee, consisting of government representatives and SCA project manager, examine the proposals and determine which sub-projects are eligible for financing. The SCA engineers draw up plans and cost estimates, and assist the CDC in procurement of goods and services from local companies.

At the end of the project in mid 2014, it is expected that the benefiting communities have implemented village-level sub-projects that contribute to the social sector and collective needs. They are also expected to have gained capacity to take increased ownership over their own development.

**Involvement of women in the Project**

NRP has achieved participation of women in decision making processes and to involve them throughout the subproject cycle. This was accomplished through mobilizing communities to allow their women to participate in meetings, trainings and decision making processes. During this mobilization procedure, a tool used was religious examples of women involvement in social and business activities, which were described to the communities.

In the beginning, NRP faced a low female participation in meetings and trainings. The reason turned out to be that the men had not always informed women on these events, as the men had guaranteed to do. To meet that challenge, NRP developed criteria for selection of subprojects by CDCs, requiring the female groups' opinions be taken in to consideration. Furthermore, NRP ensured that the trainings provided to CDCs included both female and male members.

In a few CDCs, male members initially did not support subprojects put forward by the female CDC members. The NRP team, through some discussions and mobilization, achieved to convince the traditionally more powerful male members of the CDCs to include at least one of the female proposed subprojects. However, in a CDC the male members refused to include female participation despite the NRP team mobilization efforts. It was resolved to replace that CDC.

A noteworthy challenge was the actions of a Governor in a district who insisted that CDCs should implement subprojects which are listed in the district development plan. The CDCs however, correctly submitted proposals for subprojects in accordance with the priorities and needs recognized by the communities. The situation was set right when a new District Governor assumed duties in October.

**My duties in NRP**

In 2010 I developed the Project Proposal for NRP in consultation with the Sida representative in Mazar-e-Sharif and provincial line agencies. At the Project inception in May 2011, I led the inauguration ceremony, together with another Sida-funded project to be carried out by SCA. During Project implementation, my input include to be a mentor for national staff in project management and result based monitoring, as well as preparing of the global and annual work plans and progress reports. I also lead the briefing sessions for high level Swedish delegations visiting NRP and other Sida-funded Projects in the Northern provinces. In the field I supervise and guide colleagues in community mobilization, capacity building of CDCs and in communication with district authorities and international military forces.


Cleared dipterocarp forest for Acacia mangium plantation establishment in Sabah, Malaysia (Photo Anders Malmer)

## Forest research cooperation in Sabah, Malaysia

*By Anders Malmer and Jan Falck, researchers at the Department of Forest Ecology and Management, SLU, Sweden*

### Introduction

In the Malaysian state of Sabah on Northern Borneo two long term research projects on tropical forestry have been run in Swedish – Malaysian cooperation since mid 1980'ies. The two projects had partly the same origin, and were run in the same Sida/SAREC program for some time, but came to establish field trials and experimental sites in different parts of Sabah. One site in Western Sabah with focus on land-use and soil management as well as management of water and nutrients in relation to forest production, and one site in South Sabah on management and rehabilitation of the tropical rain forests.

### 1. Soil management, nutrients and fire in Mendolong

A pulp mill was built and established in Sipitang on the west coast of Sabah during the first half of the 1980'ies. The location is in the Southwestern corner of Sabah, close to the other Malaysian state Sarawak and the small nation of Brunei. The State of Sabah invested in this industry and most of the infrastructure, like roads, housing etc., was supplied by Austrian and Canadian companies. The Swedish consultancy Ångpanneföreningen – Industrins processkonsult (ÅF-IPK) was controller for the project and also was contracted to make Environmental Impact Assessments (EIA) of the operations' effects on the nearby sea and in the forest concession for the project. EIA's were not common in tropical countries in these times, but were a prerequisite from the federal government of Malaysia for the State to run the project.

For the EIA in the forest, ÅF-IPK contracted *Nils Nykvist*, professor in Forest Soil Science at SLU in Umeå (Department of Forest Site Research at that time) as under-consultant. *Harald Grip,* research leader in Forest Hydrology at the same department was also involved from the beginning. During the years of the EIA (1984 – 1986) an experimental area with six experimental water-catchments were established in rainforest at 500 meters above sea level close to the tree nursery in Mendolong 30 km east from Sipitang. During this time *Thorsten Celander* worked as assistant SLU.

As an action following drought and famine in the Sahel in the first half of the 1980'ies, SAREC established a research program on "Forest and environment". This program gave support to *Nils Nykvist* to continue the studies in Mendolong after the ending of the EIA in 1986. With this new support as a base, *Anders Malmer* started on a combined teaching and PhD student position in the end of 1986 with *Nils Nykvist* and *Harald Grip* as supervisors. This support from SAREC, and later Sida, was renewed four times for the joint project between SLU and Sabah Forest Industries (SFI) until the end of 2001. The total support from SAREC/Sida during this period (1986-2001) was ca 13 milj. SEK The support from SFI was similar to that of Sida, and SLU contributed with lots of supervision of both Swedish and Malaysian staff and more than 20 MSc-thesis students.

The project is still unique in the tropics with 17 years of studies in 11 catchments (another five established 1994). In addition to local and Swedish students, hundreds of visitors and popular science presentations and media, as well as 27 articles in

international peer review journals were produced within the project. Of these articles four have been cited more than 50 times in other review publications. The first article published in 1990 by *Malmer* and *Grip* is now a classical work on effects on decreased water infiltration when using heavy crawler tractors for timber extraction. It is still being actively cited and has been cited 73 times up to the end of 2014.

In the end of 1987 three catchments were clear-felled and planted with *Acacia mangium* during 1988. One central comparison of treatments was between:

1. Manual felling, conventional timber extraction with crawler tractors and burning of residues before planting

2. Manual felling, manual timber extraction on wooden sleighs and avoiding burning before planting.

The lesser soil disturbance by not using tractors and avoiding burning resulted in 50 % reduction in water runoff and nutrient leaching as well as in reduction in needs for weeding. The "low disturbance practice" for establishment was less costly and resulted in double production of pulp-wood at harvest after nine years, compared with "conventional practice".

*Ulrik Ilstedt* studied active rehabilitation of growth in tractor tracks. In conventional practice the crawler tractors disturbs top soils on 25 % of the surface. He found that these surfaces did not support tree growth and demanded decades for un-aided rehabilitation.

During the early second rotation of the forest plantations in the research site, the region in end of 1997 and first half of 1998 experienced a severe "El Niño climate event" (El Nino is a periodic climatic effect caused by air pressures and waterstreams in the Pacific Ocean). This caused severe drought in the humid region of SE Asia. At this time the entire research site at Mendolong was struck by severe wild-fires and the experimental treatments were destroyed in terms of their respective uniqueness. In this severe blow to the project a positive aspect was that the wild-fires contributed to the understanding of fire behavior in different forest types and statures and its effect on nutrient leaching to streams.

During the later years of the project, *Nils Nykvist* published a number of articles about comparative studies on calcium deficiencies and its limiting effects on forest production on old tropical soils

## 2. Well planned timber harvest as the only silviculture treatment in forest management and rehabilitation of rainforests destroyed by fire.

The project "A practical evaluation of methods to improve selective logging in tropical rain forest in Sabah, Malaysia" was started with support from SIDA 1990-1992 and support from Sida/SAREC 1993 – 1998. Initially lecturer *Jan Falck* and the PhD student *Jonas Cedergren* at Department of Silviculture established cooperation with"Sabah Foundation" (Yayasan Sabah, YS). YS is a Foundation owned by the State of Sabah for support of social and economic development, financed by forest logging operations. Professor *Mats Hagner* at the same department later joined the group for supervision of the project.

In the first experiment the team, together with officers from YS, evaluated the effect of climber cutting one year before tree felling and the feasibility of directional felling and the combination. The study had 22 repetitions of the four treatments in virgin tropical rainforest. They found less damage on remaining forest stand by cutting of climbers before logging and by directional felling by professional fellers compared to conventional unplanned felling by local staff.

In the second experiment, directional felling, climber cutting was combined with a, for Sabah, new system for timber extraction including parallel skid trails at an optimal distance from each other. In this study the treatments was combined and tested in four replicates including control plots. Twenty plots of a size of 5,6 ha with a net plot of one ha were established where all trees above 10 cm are measured before logging (1992) and after logging up to today (2013). The results stress the importance of modifying logging method to the terrain; in gentle slopes the damage on remaining stand and soils was reduced. The choice of logging method affects for sure the growth rate of the residual stand. A reduction in diameter growth 3 -5 years after logging is registered on all plots except control plots.

. All trees in this 20 hectares experimental stand are still monitored for increment and production in this remote forest between Maliau Basin and Luasong in Southeastern Sabah. Due to its design and longevity the experiment is today of great international interest. The PhD student *Daniel Lussetti* is currently (2014) working with evaluation and analysis of the 20 years long time series.

When Sida's support to this project ended in 1998, IKEA foresightedly continued to support this rainforest research under the leadership of SLU staff.

**IKEA´s long-term support to rainforest restoration and SLU's related research**

On initiative from the IKEA owner, *Ingvar Kamprad*, IKEA started a large scale program for rehabilitation of rainforest, damaged by the wild-fires of the El Niño in 1983 and in 1997-1998. The program was named "Sow a seed" and was established jointly with YS. Since the establishment in 1998, more than 12 000 hectares have been rehabilitated through enrichment planting of native rainforest species.

SLU is contributing to "Sow a seed" through advice and research around restoration method, site-species matching, light demand by seedling and effects on biodiversity. With a strong commitment to forest biodiversity, compared to other active rainforest restoration research, this project deals with more species; minimum 25 species per hectare and about 80 species in total, mainly belonging to the Dipterocarp family. Among other things the methods of rehabilitation of the burned forest, with emphasis on the light demands of the seedlings, have been studied.

**The value of long term research and future activities**

Long time data series are invaluable for answering questions on how to manage tropical rainforests. Rainforest trees can be very old and reacts slowly on disturbances in their close surroundings. Without IKEA's foresight and generosity SLU would not have been able to carry out the two research projects described above. IKEA's support to YS during this 16 years period amounts to ca 87 million SEK.

The second factor for the positive progress of the projects is the relatively low cost of establishing and running of field experiments in Sabah. These land and work force demanding projects would not have been able to carry out in Sweden. Every day of the "Saw a seed program" 80 staff are planting and tending forest in the damaged rainforest.

Many foresters and scientists have made visits to the experimental areas in Sabah. Some has taken their PhD- or MSc-degrees based on research in the field. The YS projects have been hosting three master thesis students from Malaysia and five from Sweden. The two projects have together resulted in 8 international peer review articles, a number of conference reports to IUFRO and many popular science reports.

The "Family Kamprad Foundation" has recently decided to continue to support this research at SLU and at University Malaysia Sabah (UMS) until 2023. The strategy is to use the unique experimental infrastructure of earlier designed trials in the nursery and in the forest, but also in the unique time series of more than 15 years of full scale restoration, to extract new knowledge and educate new local scientists and forest officers. In this next project period four Malaysian PhD students and one Swedish post-doctor will be trained.

Finally, in 2014 the Government of Sabah has decided to set aside both research areas as national forest reserves protected from timber harvests forever.

# Oceania

## Forestry in the Pacific

*By Kurt Boström, Project Coordinator for FAO, at Vanuatu 1988-90*

### Islands in the Pacific Ocean – vulnerable to climatic changes

It is difficult to imagine how big the Pacific Ocean actually is. It is the world's largest water body with a number of, mainly small, islands scattered over an enormous area. All of the islands are of volcanic origin and have been created over a long period of time. The youngest islands are small atolls barely rising over the water. If the sea level rises these atolls face the risk of disappearing completely.

Some of the islands are inhabited and for some of the low-lying ones the situation is already now critical. If the water level rises further the fresh water supply will disappear and there will be limited possibilities for farming. The buildings will remain longest but the main facilities for living will disappear. Only fishing will remain.Fishing has been a mainstay in the economy of the small islands, but only for local consumption. Large scale fishing for export has never been, and will never be, a serious alternative.

### Forestry on the islands – and its constraints

Growing of forests and trees for local consumption has been a necessity to satisfy the local demand for construction wood and fuel wood. Import of wood and trade between the islands has been on a very low scale. The islanders have had to rely on what their own land could supply and coconut wood has often been the only wood available. Only the larger islands have had surplus of wood for export but the specific ownership situation of land in the region has been a hindrance to large scale activities. All land is owned by the communities and a consensus of all members in a village would be required before anything can be done. Forestry matters have normally a low priority and are often dealt with as a side activity by agriculture departments. Only the larger islands have had separate forestry departments and there is shortage of educated forest personnel at all levels. Constraints for forestry development in South Pacific can thus be summarized:

- Lack of detailed estimates of the extent of forest resources and data needed for planning forestry development.

- Lack of market intelligence to maximize export earnings and tap new markets through a regional approach.

- Absence of comprehensive planning/programming processes linking land use, forest resources, harvesting, processing, marketing, market consumption and socio-economic development.

- Weak institutions and inadequate manpower to enlarge forestry sector activities and increase their contribution to national economiesand thus a generally low status of forestry development

## Vanuatu

Vanuatu is one of the states in Melanesia, the chain of islands which are fairly close to Australia in the Pacific. Vanuatu consists of 4 bigger and around 80 smaller islands. The population is now (2013) around 210 000. The natural vegetation is rainforests, some dry forests on the southern islands and mangrove vegetation along several coasts. The people are Melanesian to 95% and there are more than 100 different languages used on the islands. Bislama, a local version of pidgin English, is the official language. English is widely used and understood in the cities.

Vanuatu as an independent country has a comparatively short history. The country became independent in 1980 after having been governed as a joint colony (a "condominium") by France and Britain for almost 80 years, since 1906. Vanuatu was previously known as New Hebrides a name it was given by the Englishman *James Cook* when he passed the islands in 1774. The islands have been populated since 1300 B.C. and were discovered by Europeans in 1606.

Port Vila, the capital of Vanuatu, is a small city, but excellent as duty station. All conveniences you could demand were available. There were good flight connections to the other parts of the region and that was important since my assignment included frequent travels. Travel by air was the only alternative for travelling between the islands.

## Regional FAO/UNDP–project on forestry with 14 participating countries

After many years of discussions a forestry development project for South Pacific became operational in 1988. It was scheduled as a 2-year regional Project with 14 participating countries financed by UNDP and executed by FAO. The project office was located in Port Vila. I became the Project Coordinator for the first two years, 1988 – 90. The overall objective of the Project was to upgrade the status of forestry development and thereby contribute to the socio-economic well-being of the people. The immediate objectives were in brief:

- Increased knowledge of land use systems and forest resources.
- Increased capacity among the countries to draw up forest sector plans.
- Enhanced institutional capacity to plan manpower needs.
- Improved utilization of coconut wood.
- Increased sharing of information (regional cooperation) especially in relation to the role, functions and benefits of forest and trees to the general well-being of the communities.

The Project had thus a clear social forestry approach with focus on in the first place to satisfy the local needs of forestry products. Export possibilities could be considered for special products. Large scale production and export would be possible only from a few larger islands.

The first phase of the Project was partly financed from the initial contribution, but it became soon clear that additional funds were necessary if the objectives should be met. The preparatory phase was also expanded from two to three years. To meet the extra costs the donors gave an additional allocation and AIDAB (Australian International Aid) also contributed. After the first period the intention was that the Project should be financed by local sponsors and the participating countries.

**Main activities and results**

During the first two years most of the scheduled activities were initiated, some even fulfilled, and the prospects were good that the original objectives should be fully met by the end of the Project after three years. The main activities and results during the two years which covered my involvement in the Project were:

- A system for monitoring and recording of forest resources was worked out.
- A workshop on forest sector planning was held.
- A workshop on coconut wood utilization was held.
- Preparations were made to enhance regional contacts in the Forestry Sector. This activity later resulted in regular "Heads of Forestry meetings".

The project could be seen as an example of a successful development effort. One reason for the positive response was that the project was discussed for a long time among the countries and that there was full consensus about the objectives and how to implement them. The new Project had a small staff, mainly only one Project Coordinator

For my own part I left the project after the first two years. The Project continued however first for one year to complete the preparatory phase. Based on recommendations from the first phase a new long term UNDP/FAO Project was prepared and that Project continued for many years and became an important building stone in the development of the Forestry Sector in the region.

The Pacific was a positive and stimulating environment to work in and Port Vila was a good duty station with good communication facilities. The only drawback I could think of was the location. It was as far from Sweden as one could think of and a trip home would take 2 days.

Native forest in Hawaii (Photo Anders Malmer)

# Palms and rainforest on Western Samoa

*By Lars Bovin, AssociateExpert for FAO, on Western Samoa 1975-76.*

*This text has been translated and slightly modified by Lars Bovin from an article he wrote in Swedish to U-landsskogisen of SLU nr 6/1976./SN*

## Western Samoa

Time passes quickly  The "summer" down here in Polynesia (which actually lasts the whole year) is now replaced by a bit dryer and cooler weather. The concept of seasons is rather smudgy here. I have been here for nine months now and the differences are, for us, not very conspicuous.

Western Samoa is more than just beaches, coral reefs, crystal clear water and the Samoan moonshine. Here are also 400 000 acres of tropical rainforests, idle volcanoes and black lava streams from the eruption in 1905, which are not yet covered with vegetation. The islands have big potential opportunities for the forest production. Western Samoa consists of 9 of the westernmost of the Samoa Islands almost in the middle of the Pacific Ocean. The Samoa Islands became inhabited by Polynesian people around 1000 B.C. The first Europeans arrived there in A.D. 1722.  In 1899 the islands were divided between Germany, which got the western part, and USA which took the eastern 6 smaller islands, which it still has. After the First World War Western Samoa became a NF-mandate under New Zeeland and in 1962 it became the first Polynesian independent state. In 1997 it changed its name to Samoa. The two biggest islands are Savai´i and Upolu, the latter with the capital Apia.

The islands are built up by volcanic lava and tuff with coral reefs around the coasts. On the inner parts are dense rainforests and along the coasts coconut palms are dominating. 90% of the population are Christianized Polynesians and live on coconut growing and fishing. The dominating industry is a Japanese-owned factory for making car-parts.

## The Forestry Development Project

Some words about the project "Forestry Development" in which I work. It includes an afforestation  program, a utilization program and scholarships for educating Samoans abroad. For FAO's part it has mostly consisted of provision of expertise and scholarships. World Food Program, WFP, pays half of the worker's salary for the afforestation as food. Since the Project start in 1968 the amount of foreign co-workers, so called experts, has varied. At its most, three foresters and two forest technicians were here. The financial crises within UNDP has this year, 1976, resulted in that the post as Chief Forest Officer has been vacant since November 1975 and the Forest Management guy leaves in June. However, it has now been decided that the post as Chief Forest Officer will be refilled, hopefully in July 1976.

The first Samoan forester will return in June after training abroad, and the second one will probably be examined by the end of the year. At present we are only two persons on the forest side. This has led to much administrative work for me, besides my regular working tasks with the impregnation plant, the use of local woods, the use of coconut palm trees and harvesting matters.

The planting program is 500 hectare per year of mahogany, teak, *Toona ciliata*, Anthocephalus cadamba, Cedrella odorata and Eucalyptus deglupta, amongst others.

Large quantities of so called exotics are planted to bridge over the lack of timber when most of the natural forest has been harvested. The rotation period will be around 10-12 years for fast growing construction timber and around 40 years for the quality timber.

The harvesting is 60-70 000 m³fpb annually which are delivered to two sawmills and is so far done exclusively in the rainforest. The conditions for extraction are generally good with short truck transport distances and soil that can bear the transport. But the terrain is very rocky and the sharp lava blocks tear heavily on the machines. Heavy caterpillars are used and they are in fact not as big as I thought when I came here**.**

**Use of old palm trees**

An interesting area which I have worked quite a lot with is the use of coconut palm timber. Western Samoa has big areas with too old coconut palm trees which give low production of coconuts. New planting in large quantities are needed to avoid massive recess of the copra production which is the most important export product for the country. This means harvesting of 90 000 m³sk of palm timber annually under a period of ten years and during the following 20 years slightly less.

The insect problem is in this case quite severe; legislation forbids leaving logs in the forest. No use of the logs has previously been found so they have been dumped into the sea and made the shores look very ugly. Here the sea is a wonderful resource. Within the coral reefs the lukewarm water gives excellent living conditions for small fish, sea shells and other "sea food", and that is disturbed by rotting logs.

Currently we are sawing fencing poles of different types and poles for construction use of the palm timber. Then they are pressure-treated. For this purpose, a small circular saw is included in the Government-owned project. Both chain-saws and circular saws get heavily worn by the palm timber which contains hard components of silicon and other hard material. But the wood is beautiful and strong and can be used for carpentry, furniture making etc.

**Moonlight over Samoa**

The Samoan moonlight is famous in Sweden. I just read a Polynesian legend about the dark stains on the moon. These stains are shadows of huge Bunyan trees (*Ficus spp*), people say. A bird once flew the long way from the moon to Polynesia with seeds from these trees. They grew to gigantic trees with many aerial roots which create new stems, and they are now scattered all over the rain forests, also on Samoa.

The moon is of course beautiful when it shines over the palms and through the houses without walls in a village by the shore, where the sea breakers shine in white against the reef, while the tones of a Samoan Siva dances out from the shadows around a kerosene lamp…

In the beginning of 1997 I was back in Western Samoa just for a few days. I visited my old office and found that after 21 years there were still people recognizing me. Nowadays, in the year 2013, I can feel in my mind the smoke of small fires to make food of pigs and I can also see an old man making *kava* (a central stimulating drink) in a big bowl.

# Latin America

## Swedish forestry support to Nicaragua[5]

*By Pierre Frühling Forestry Programme Officer for SIDA, in Nicaragua 1991-95*

### Introduction and summary

During the period 1980 to 1998, almost SEK 400 million of Swedish public funds were transferred to Nicaragua on a grant basis and invested for the purpose of forestry development. The overriding objective was to contribute to major changes in the traditional (and generally rather destructive) management of forest lands in Nicaragua and to lay the foundations for forestry as a sustainable economic activity generating employment, export income and environmental benefits.

Evaluations and several follow-up studies show, however, that tangible and lasting results from this large-scale and extended endeavour were meagre. A common explanation for this lack of success is, of course, that those years constituted a period in Nicaraguan history characterised by wartime conditions and general turbulence as well as frequent and far-reaching changes within the spheres of politics, economics and the public sector. This is, however, not the full story - and it also begs the question why Swedish forestry support to Nicaragua continued for so many years in spite of adverse conditions and scant results.

The principal causes for this unsuccessful outcome are found to be of a non-forestry character and mainly related to the lack of mutual commitment, the absence of a high-level policy dialogue between the two Governments and the influence of political agendas on both sides. In retrospect, the lack of contextual competence shown by the forest consultancy companies involved is surprising.

### Background

In the beginning it all seemed very logical and reasonable. The popular struggle against the Somoza dictatorship in Nicaragua had been long and hard, and when the armed insurrection was finally over in July 1979, foreign observers entering the country were shocked by the sacrifice in human lives and material destruction that had resulted from Somoza's last desperate attempt to maintain his power. Within two weeks' time, the first decision was taken on bilateral Swedish assistance to Nicaragua, allocating SEK 25 million to projects within the health sector. Support for economic rehabilitation and development was soon to follow, and in this context forestry and mining almost immediately gained high priority.

Sweden had a long and solid tradition in forestry, and since the end of the 1960s Sweden had also - through SIDA - initiated a series of forestry development programmes in several parts of the world. Nicaragua, for its part, possessed the largest remaining forests in Central America and had a potential for forestry development.

[5] For a more detailed description and analysis, the interested reader is referred to a report by the same author with the title "When development projects go orphan", published as Sida Evaluation 00/34 (Stockholm, 2000).

Furthermore, the revolutionary government seemed to take issues regarding natural resources and forestry seriously: within a few months a national institute for natural resources and the environment had been created, as well as a state corporation for the management of the nationalised part of the forestry industry. To be sure, Nicaragua lacked forestry tradition - forests were mainly seen as an obstacle that must be cleared in order to expand the pasture available for extensive cattle breeding or for agricultural purposes. But the new government appeared to have the insight; if it also possessed the necessary political will and perseverance - then it should be possible to achieve a real change and take advantage of the country's forestry resources.

**Main phases of the Swedish support**

The Swedish support got started in 1980 with purchases of spare parts and equipment needed to maintain production at recently nationalised forest companies. Initially, the financial level of the support was rather modest but after the decision by the Swedish Parliament in 1982 to give Nicaragua status of programme country, funds allocated to forestry assistance increased substantially (reaching SEK 30 million annually already in 1983/84) and the support soon came to be implemented as a sector programme.

During the almost 20 years up to its termination in December 1997, the programme went through periods of shifting emphasis both as regards the objectives and the allocation of resources. Executing on the Swedish side was a consortium of the two consultant companies Swedforest and Interforest. As concerns the main purpose of the operations, the programme is estimated to have gone through ***four major phases:***

***1. From 1982 to 1985/86,*** activities focused on the development of a database for the sector and the formulation of a Forestry Master Plan for national forestry development. Moreover, the assistance for rehabilitation of the existing forest industry (mainly sawmills), which had started in 1980, was continued in order to increase production and export levels.[6] For this purpose, a National Wood Technology Laboratory was also established. Systematic forestry training activities were initiated and a vocational school for the training of forest technicians, Instituto Nacional Técnico Forestal, INTECFOR, was established.

Finally, institutional support was provided for the main state actors related to the sector – the national institute for natural resources and the environment (IRENA) and the national forest corporation (CORFOP). During this period, the financial commitment from the Swedish side rapidly increased, starting with SEK 10 million for fiscal year 1982/83 and reaching more than SEK 30 million already in the fiscal year 1983/84, a level which was also maintained the following year.

***2. From 1985/86 to 1990,*** the programme was essentially production oriented, in an attempt to yield quick economic results to contribute to the solution of the country's severe economic crisis. Support to the forest industries exceeded half of the total SIDA inputs and long-term objectives were generally given lower priority. Assistance to forestry training was continued, however, and a special project among small farmers (*farm forestry*) was initiated.

[6] The Nicaraguan forest industry was, at this time, characterised by rather obsolete equipment and from 1982 onwards - due to the North American economic blockade – also hampered by a severe lack of spare parts.

Already at the start of this period, the armed conflict with the US-backed Contras had developed into a situation very close to a civil war, with severe consequences for the security situation in the country, also in areas relevant for forestry development. The period from 1986 to 1990 was an economically very difficult time for Nicaragua, characterised by hyperinflation (up to 33,000 per cent/year) and a general shortage of (essential) imported goods. Survival, not development, now became the overriding goal for the Nicaraguan Government.

At the end of 1985 the very ambitious National Forestry Development Plan was finally presented, after four years of intense work. The Plan was said to cover all major aspects of the sector for the coming 40 years; providing basic and detailed facts, different scenarios (with the corresponding computer generated models) as well as proposals on how to lay the foundations for rational forestry development in Nicaragua. However, the ongoing war with its increasingly severe effects within all spheres of society did not find its way into this Plan, nor was the war situation and its implications for future forestry support dealt seriously with in the reviews, evaluations or internal memoranda that were written during this period. Moreover, while the Plan was enthusiastically embraced by institutions such as IRENA and CORFOP, it was never approved or endorsed by the Nicaraguan Government.

***3. During the period 1990 to 1992***, the programme was drastically reoriented. Long-term goals were revised towards institutional development, conservation and support to the private sector. The support to industrial activities was terminated, whereas assistance to training continued (also after the completion of the construction of the National Technical Forestry Institute). Institutional development and strengthening of the national forest authorities was given priority, and the farm forestry project was considerably expanded. Incentives to farmers for forestry plantations and management of existing productive forests were provided through a specific modality called Fondosilva.

***4. From 1992 to 1997,*** the concentration on institutional development for the country's forestry authorities (and the Forestry Training Institute) was further strengthened and a major effort was made to include the forest-rich (and multi-ethnic) Atlantic Coast in the programme, aimed at achieving the titling of forest lands and contributing to sustainable management of state and community forests. All conservation projects as well as the farm forestry project were terminated.

## Lasting results

In 1999, two years after the termination of the Swedish forestry sector support to Nicaragua, what kind of impact could be perceived and which were the main lasting results? That question constituted the point of departure for the study referred to at the beginning of this article;[7] a study based on a comprehensive set of sources:

[7] Sida Evaluation 00/34 (Stockholm, 2000).

- Firstly, a review of existing documentation in different Swedish archives[8] as well as on the author's own first-hand experience from the Forestry Programme.[9]

- Furthermore, a special input report on lasting results and the current situation regarding forestry was undertaken in mid-1999 by Nicaraguan consultants; followed by a field trip by the author to verify some of the results and to undertake extensive interviews with individuals who had held key posts at technical and political levels during the programme.

- Finally, the same kind of interviews were also undertaken with key staff on the Swedish side.

Regarding ***long-term planning*** for forestry sector development, three major plans were elaborated with Swedish support, providing valuable data and contextual analyses but with very limited direct impact on forestry development; a fact which reflects the continuously low priority given to this sector by the Nicaraguan Government as well as by leading circles within the national business community.

Concerning support during the 1980s to the ***national forest industry*** no lasting results at all were observed, mainly due to the combined impact of war-time conditions (during the 1980s), the far-reaching economic changes initiated in 1990 and wide-spread tenancy problems.

Also regarding ***institutional development*** – defined as the establishment of national forest authorities with reasonable capacity, acting within the framework of a national forest policy, a modern forest legislation and cross-sectoral coordination – results have been remarkably meagre. The situation in 1999/2000 was still characterised by a weak and deficient legal and institutional framework and sectorial isolation, resulting in a continuous lack of control regarding forest exploitation and a very limited contribution from the forestry sector as regards economic growth and employment.[10]

Important and tangible results were, however, achieved within the area of ***human resources development.*** The most visible result within this context was the vocational forestry school (INTECFOR) which was born and established due to Swedish support and from which several hundred forest technicians have graduated.[11] Moreover, considerable professional knowledge was created through the national planning efforts, the pilot projects, the efforts to strengthen institutions and the activities developed on the Atlantic Coast.

The domestic knowledge and professional capacity regarding forestry and forestry development in Nicaragua is, to a high degree, the result of the continued Swedish support. However, this national competence has been constantly underutilised.

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[8] The Swedish National Archives; the central archive at the Swedish Ministry or Foreign Affairs and the central archive at the Swedish International Development Agency, SIDA. The review of these archives comprised the full period (1980-1998) and included classified documents.

[9] From the beginning of 1991 to mid-1995 the author served as First Secretary at the Swedish Embassy in Nicaragua, being responsible for the management of the Forestry Programme.

[10] These features seem to have prevailed, judging from a rapid search on the Internet related to the current situation (in 2013).

[11] The campus and facilities of INTECFOR (located in Estelí) have recently been refurbished, and the school is still functioning (in 2013).

**Main causes for the unsatisfactory results**

The four principal factors that were decisive for the unsatisfactory outcome of the programme are all of a non-forestry character and remain relevant to most development projects not only in Nicaragua.

***1. Involvement and commitment:*** There seems to be no doubt regarding the high priority the forest sector was initially awarded by the Nicaraguan Government. During the period 1982-85 this priority (and commitment) disappeared, however, due to the impact of the armed conflict. By 1984/85 the general situation in the country resembled that of civil war and survival, not development, became the overriding goal of the Nicaraguan Government.

Thus, the ambitious National Master Plan for forestry development was enthusiastically embraced by the new forest authorities but never approved by the Government. On the Swedish side few people read the signs or were willing to draw principled conclusions, most likely due to the general political climate in Sweden and the Swedish agenda concerning support for Nicaragua.

Nicaraguan priority for, and commitment concerning, forestry sector development was never restored, not even during the non-sandinista Governments that followed from 1990 and onwards. But the programme continued - due to its own dynamics and support (on both sides) from technical levels. When Sida finally decided in mid-1997 that the programme was to be terminated, no objections were presented by the Nicaraguan Government.

***2. Political agendas and quality consciousness:*** Until 1979 Sida had never been active in Latin America. The reasons behind the Swedish Government's instructions to initiate (and soon expand) activities in Nicaragua were directly linked to foreign policy objectives. With the escalation of US interference from 1982 and onwards, Swedish political commitment towards Nicaragua was reconfirmed and deepened. Maintaining Swedish diplomatic support and a considerable volume of development assistance was important both as a contribution to Nicaragua in times of unlawful external aggression and to avoid the country being lost to the Communist bloc - which would create another potentially dangerous focal point for East-West tensions and constitute a severe blow for the democratic cause in the Third World.

Sweden thus genuinely wished to support Nicaragua, but the Swedish Government also "needed" a considerable volume of development assistance in order to be accepted as a realiable friend with a chance of perhaps influencing domestic political choices (towards free and fair general elections and to promote various peace initiatives). For several years this fact most probably reduced any possible interest within the Swedish Government for a detached analysis of the priorities, realism and results within development cooperation. This general attitude was conveyed to Sida, where the lack of a detached or critical attitude was even more predominant and clearly affected also the quality of reviews and evaluations.

For the Nicaraguan Government, Sweden became an increasingly important ally as US aggression and international political polarisation escalated. Together with a few other Western countries, Sweden constituted an important and prestigious bridging force. On the other hand, Sweden was firmly embedded in the world capitalist system and could not be fully trusted. This ambiguous attitude implied that the comprehensive picture and full scope of domestic considerations regarding certain priorities or decisions (including those related to Swedish development projects) could not be shared with Swedish representatives.

***3. Mechanisms for dialogue and programme steering:*** In a comprehensive external evaluation of the programme concerning the period 1982-92, it was found that no high-level discussions had taken place between the two Governments on policy issues or issues of a principled character. In practice, most bilateral discussions between the two countries were, on the Swedish side, delegated to Sida where prior knowledge concerning Nicaragua was lacking and where the internal structure tended to give the discussions a rather ”technified” character, generally not addressing fundamental policy issues.

The Nicaraguan agency for external cooperation, for its part, always relied on national technical expertise within the forestry sector. In addition, both sides to a large extent depended on the information and analysis delivered by the technical consultants recruited by Swedish forest consultancy companies, put at the disposal of the Nicaraguan authorities but also consulted by Sida. The circle was thus completed.

The Forestry Programme, which had been initiated with clear high-level commitment on the Nicaraguan side, soon became an orphan as concerns policy issues and high-level political support, detached from its original long-term goals and in practice supported only by the same domestic forest authorities which gained increased strength from the Programme, and by the corresponding technical department within Sida.

***4. Aid dependency:*** When the new Nicaraguan Government under *President Violeta Chamorro* came to power in 1990, the country’s foreign debt was in the order of USD 10 billion and for the first half of the 1990s national economic growth was constantly negative. In this situation the country became extremely dependent on foreign assistance (grants and loans) to stay afloat.

Whether the international development projects offered really constituted a priority for Nicaragua or not sometimes became less important than pleasing the donors and complying with their special demands – the overriding goal was to maintain a broad-based donor group and to ensure that the package from each major donor had a reasonable composition in general terms.

Sweden and the Nordic countries constituted a donor group of major importance, they were very receptive to the Nicaraguan Government’s requests, they soon provided large sums of fresh money in the form of balance-of-payments support and they were allies in discussions with the international financial institutions regarding the vital issue of renegotiation of foreign debt. In this context, it may be understandable that the Forestry Programme, which Sweden seemed to care so much for, was not given very close scrutiny before being approved by the Nicaraguan Government.

**The root causes behind the very limited results were thus of a political character. However, the lack of contextual competence (and independent, detached analysis) shown by the forest consultancy companies involved is surprising – and also implies a challenge concerning what mechanisms to apply in order to avoid repeating the same kind of errors today and in the future.**

# A Sida-supported forest project in Bolivia

*By Lars-Gunnar Marklund, Team Leader for Scandiaconsult Natura in Bolivia 1997-2003*

## Technical support to a poorly developed forest industry

In the early 1990s Sida initiated a support to the development of the private sector in Bolivia and a series of projects were prepared – among them a support to the modernization of Bolivia's forest industry, with focus on the sawmill industry. The sawmill industry in Bolivia was in a poor shape in the 1990s. There were more than 200 sawmills in the country often integrated with other forest industries. They are mostly small, mainly old bandsaws, located within the forest concessions far from population centres and markets, producing rough sawn wood of mediocre quality. Both productivity and yield were low and the large quantities of sawdust and wood residues were thrown away or burnt. The sawmills operated only 4 – 6 months per year, and the wood was air-dried before transporting to the city for further processing.

Bolivia, a landlocked country in South America and more than twice as big as Sweden, has vast and underutilized forest resources. The country has about 50 million hectares of forest land, of which more than 30 million hectares can be used for productive purposes. The forests are of mixed broadleaved species, ranging from dry forests in the south-east to tropical rain-forests in the north. There are only a few forest plantations, mainly of *Eucalypts* in the highlands and valleys, and other hardwoods in the lowlands. The forest sector is considered as one of the productive sectors with a potential to grow substantially, generating export income and at the same time provide employment in poor rural areas, thus reducing poverty.

The Sida funds were not intended to finance investments, only to provide technical support. In order to ensure that proposed investments were implemented, the support was focused to a few private industry enterprises with adequate forest resources, an existing industry and financial strength for new investments. Sida contracted the technical support to the Swedish consultant company Scandiaconsult Natura in collaboration with another consultancy group Forest Industry House of Sweden. During the project period four long-term consultants and around 20 short-term consultants worked in the Project. The project counterpart was Bolivia's Forestry Chamber (*Cámara Forestal de Bolivia*) and its technical branch Promabosque.

Supporting industrial development based on natural tropical forests is controversial for Sida as well as for many other donors, so in order to safeguard social and environmental concerns, the project also included support to sustainable forest management and forest certification, as well as support to marketing activities.

## A new Forest Act demanded improved forest management

The Project started early 1997, a critical moment for the forestry sector, as a few months earlier the new Forest Act had been approved with far-reaching consequences for the forest enterprises. The previous modality of short-term harvesting contracts was eliminated and replaced with long-term concessions. This transition required that the forest companies prepared comprehensive forest management plans following new and challenging technical standards in order to secure the access to raw material for their industries.

The first key project activity was therefore to establish technical capacity within Promabosque to support the private forest companies in the elaboration of management plans, including concession inventories and GIS-based mapping of concessions, existing and planned road infrastructure and annual harvesting plans. During the transition period, Promabosque assisted more than 70 private forest companies to elaborate their forest management plans and to get their forest concessions approved.

Once the management plans were in place, the project provided support to the companies to go further and achieve FSC certification. Many companies moved towards certification, and at its peak, in 2002, Bolivia had more than two million hectares of FSC certified forest concessions and received the "Gift to the Earth" award from WWF for its achievements. The Project also provided training in forest operations planning and logging techniques aiming to reduce the impact on the remaining forest and at the same time improve efficiency and productivity.

Meanwhile, the Project analyzed the current situation of the forest industry and forest sector in order to identify the main options for future business opportunities. Given the new technical standards for forest management, it was clear that the forest companies could no longer rely on only harvesting a few highly valuable species such as mahogany and Spanish cedar. Instead they would need to harvest more species, although of less value, in order to cover the fixed costs for operating a concession. Most of these species could not be exported as rough sawn wood, as the export market value would not cover the cost of harvesting, sawmilling and transport to nearest port – the latter very costly as Bolivia is a landlocked country.

**Improvements of the sawmill industry**

Due to these circumstances, a new strategic business model emerged, focusing on improving the sawmill industry to become more efficient and productive and capable of processing some of the very hard woods that are abundant in Bolivia's forests. At the same time, it was important to move towards a further processing of the sawn wood into wood products with added value, such as kiln-dried pre-dimensioned wood, planed wood, blanks and manufactured products, thereby reducing the impact of the high transport costs in the overall cost structure.

As a first step, the existing sawmills needed to be improved without making any major new investments. In order to do this, the forest companies were recommended to implement a number of critical improvements, such as:

- Improvement of the access to and the infrastructure at the sawmill site, allowing for a nearly year-around operation
- A thorough maintenance of the sawmill machinery, in particular change of bearings, foundations, alignment of log-carriage, crowning of the wheels, etc.
- Introduction of high-quality stellite-tipped saw blades.
- Training of saw-milling and saw-doctoring staff.

## Forest Industry Service Centre

To achieve this, the project supported the establishment of a Forest Industry Service Centre at the premises of Promabosque in Santa Cruz, one of Bolivia´s biggest cities located in the eastern lowlands. This Service Centre provided (and still provides) technical support services to the sawmill companies, and introduced some important new technology among which should be mentioned:

- Equipment for high-precision crowning of the band-saw wheels on site, without disassembling the sawmill.
- Punching and welding equipment for producing high-quality saw blades.
- Machinery for automatic stellite-tipping of the saw blades.

The services provided by the Forest Industry Service Centre quickly became much appreciated and what started out in a pilot scale with a few sawmill companies quickly spread to a vast majority of the sawmill operations in the country. The sawmill owners noted quickly that by investing an affordable sum in the maintenance and in training package provided, and by using new high-quality saw blades, the productivity and yield drastically increased.

And furthermore, they could now process some species with very hard wood which they earlier were not able to cut in the sawmill. The companies also noticed that the high quality sawn wood they got after the sawmill had undergone maintenance, substantially reduced the processing costs further down the value-added chain.

## Market studies and improvements

The Project also analysed strategic issues related to the forest industry, identifying products and processes with most opportunities to be competitive on the international market. In this context, it became clear that sawmills should be located close to the forest, they should be significantly bigger than current sawmills, and integrated with kiln-drying facilities and some degree of further processing, e.g. planing and pre-dimensioning. This way, transportation costs could be substantially reduced and product value increased.

Based on these strategic considerations, the Project developed several feasibility studies for new large-scale sawmill operations. None of these were fully implemented, but several companies implemented selected parts of these project ideas, such as for example setting up dry kilns at the sawmill site that used residues for heating. One company also established a turbine for co-generation of electricity, which was entirely run on residues from the sawmill.

The Project also provided technical support to the companies that wished to invest in improvements further down the value-added chain. A common problem for the sawmill industry is that it is fairly easy to sell the high-quality products, but the sawmill operation produces large quantities of medium and low qualities that are more difficult to sell, particularly in a country like Bolivia with a very small domestic market for wood products.

The Project therefore looked into options to add value to the lower grades by producing wood panels, beams, etc. As a result, one of the supported companies invested in finger-joint equipment to produce beams and finger-joint panels.

To cover the entire production chain, the project also gave support to market-related activities such as product development, market analysis, participation in international fairs, production of promotion and information material, etc. The market-related activities were of more generic nature, and not so much focused on the specific needs of individual companies.

**The conclusion of the Project**

The main Project ended in 2001 as planned, having achieved most of its goals. However, Sida considered that the Forest Industry Service Centre would benefit from a continued support in order to consolidate its structure and to become self-sustaining, so an additional two-year targeted support was approved, ending in 2003. Between 2002 and 2004, Sida also financed another forestry-related project in Bolivia aiming at the institutional strengthening of the Forest Superintendency, the authority responsible for giving out forest concessions and approving annual harvesting plans.

**Recent developments**

After the change of Government in 2006, following the election of *Evo Morales* as President, the Forest Superintendency was abolished as an autonomous authority, and it functions was transferred to the newly established Authority of Forests and Lands (*Autoridad de la Fiscalización y Control Social de Bosques y Tierra, ABT*). By moving these functions under the political structures, the supervision and control of forest concessions and harvesting permits became subject to an increased political influence.

The global finance crisis in 2008 severely affected the forest industry. In particular, the companies with their production focused on supplying the US market with doors and other building materials faced difficulties as the construction sector of the United States became almost paralyzed, and some companies even had to close their operations.

Today, 2015, the Bolivian forest companies face strong competition from imported wood and wood products, and exports are decreasing. Together with the ABT they are looking for options how to make the forestry business more competitive by reducing taxes and levies and by simplifying the bureaucratic processes. However, the conditions today are far more complex than 15 years ago, as the resource base has become increasingly scarce and fragmented, due to a continued high rate of deforestation and agricultural expansion. This, in combination with an unfavourable political climate for large-scale private investment, is further limiting the options for establishing efficient industry projects that are internationally competitive.

## From Iran via Brazil, Argentina, Bangladesh to Suriname

*By Roy Larsen, Forester*

*I graduated from Oregon State University in 1960 with a Bachelor of Science in Forest Management. Following graduation I went to work in Oregon and Washington for the Timberlands Division of Crown Zellerbach Corporation. My work primarily involved forest management (reforestation, silviculture, protection, research etc.) and timber harvesting operations (planning, progress control, productivity, utilization etc.), a good background for future consulting work.*

*In the early 1970s Jaakko Pöyry AB was engaged by the Timberlands Division to assist in the transition from harvesting large old-growth timber to harvesting smaller second-growth timber. In 1975 I was employed by Jaakko Pöyry AB and moved to Sweden where I worked for Jaakko Pöyry AB and Interforest AB as a forestry consultant. In 1992 I began working as an independent forestry consultant. My consulting work has taken me to North America, Central and South America, Europe, Asia and Africa.*

*I have been asked to summarize my experiences from my long-term assignments in Asia and Latin America. Below is this summary, which gives a fairly good picture of work with which I have been involved.*

### 1975 - 76 Iran

Project: Pulp & Paper Mill and Sawmill Project in the Sari Region of the Caspian Forest Employer: Jaakko Pöyry AB. Duty: Planner of Forest Harvesting and Transportation Operations. Main work:

- Make on-the-ground and aerial checks of the natural hardwood forest area to determine terrain conditions, accessibility, species, timber quality, existing uses, etc.

- Determine the harvesting and transportation methods and systems to be used in the forest operations.

- Determine the road needs for the areas to be harvested.

- Plan the sequence of development and harvesting of the forest area with consideration to terrain, tree species, timber quality, timber volumes, etc.

- Determine the equipment needs, personnel needs, investment costs and operating costs for the forest operations and the development and support activities.

- Examine and evaluate the roads and harvesting conditions throughout the Caspian forest region.

**1978 -79 Brazil**:

Project: Specialty Pulp & Paper Mill in Bahia using only sisal fiber as raw material Employer: Jaakko Pöyry Engenharia, Sao Paulo. Duty: Project Manager. Main work:

- Evaluation of the sisal fiber resource and the economics of producing sisal fiber for a new Specialty Pulp & Paper Mill.

- Determine the productive area, stocking and age classes of two large sisal plantation areas established to supply fibre to the Specialty Pulp & Paper Mill being constructed.

- Develop methods for measuring and determining:

- Growth and productivity of the sisal plantations,

- Sisal leaf harvest yields and the productivity and cost of plantation harvesting operations,

- Fibre yield following defibration of the sisal leaves and the productivity and cost of defibrating operations,

- Productivity and cost of packing, loading and transporting the sisal fibre to the mill as well as means of transportation.

- Check supplementary sources of sisal fibre.

**1979 - 80 Argentina**:

Project: Pulp & Paper Mill at Puerto Piray in Misiones. Employer: Interforest AB. Duty: Project Manager. Main work:

- Systems analysis of harvesting operations in pine plantations and natural hardwood forests plus utilization of sawmills residues.

- Determine appropriate harvesting and transportation alternatives for supplying the new pulp & paper mill with wood from natural hardwood forests and pine plantations.
  .
- Evaluate these alternatives and select the most appropriate alternatives for detailed analysis.

- Determine the productivities and costs for the selected harvesting alternatives in order to determine which were most appropriate for implementation. This was done separately for the pine plantation and the natural hardwood forest operations.

- Determine the productivities and costs of different loading and transportation alternatives that were compatible with the selected pine and hardwood harvesting systems.

- Evaluate different systems to be used for sawmill residues.

- Based upon the results above, determine equipment needs, personnel needs, investment costs and operating costs for the different operations.

**1985 – 86 Bangladesh:**

Project: Match factories in Dhaka and Khulna. Employer: Swedish Match Corporation (on loan from Interforest AB). Duty: Vice President Forestry.Main work:

- Responsible for securing the present and future wood supply for the two geographically separate match factories.

- Determine what management and forestry activities are needed in order to insure the short-term and long-term wood supply to the match factories.

- Determine and implement measures regarding the wood supply to improve the yield and economy of the two match factories.

- Improve wood handling, storage and control.

- Determine the reason for purchased wood volumes at one of the match factories being more than the wood volumes consumed, and correct the problem.

- Improve the dimensions and quality of the harvested and purchased match wood which comes from the Sundarbans mangrove forest, tea plantations and small woodlots.

- Work together with the major supplier of matchwood, Khulna Pulpmill, to improve the quality and secure adequate volumes of matchwood from their operations in the Sundarbans forest.

- Test new potential match wood species as to yield, quality and suitability with the existing match manufacturing processes.

- Initiate activities which could lead to the establishment of match wood plantations.

- Visit a match factory and agro-plantations in Uttar Pradesh, India, to determine if the activities there could be applicable in Bangladesh.

- Purchase speed boats to allow the forestry staff fast and independent access to the Sundarbans forest and other wood supply areas near the Bay of Bengal which are primarily accessible by water.

- Select and train Bengalis to manage the wood supply and forestry activities.

**1993 - 94 Bangladesh:**

Project: Integrated Resource Development of the Sundarbans Reserved Forest Employer: UNDP/FAO. Duty: Consultant on Mangrove Harvesting and Transportation and Forest Products and Consultant on Mangrove Forest Products (Wood). Main work:

- Evaluate existing timber harvesting and transportation operations in the Sundarbans forest area.

- Determine the changes needed to increase harvested volumes, minimize waste and improve operations, and determine the value of such changes.

- Determine the needs for improvements in forest management and supervision of operations.

- Evaluate the impact of mangrove harvesting and transportation activities on other resources of the Sundarbans such as fisheries, honey collection, palm leaf harvest, firewood collection, wildlife, recreation, tourism and local employment.

- Determine the current status of mangrove wood forest products (including fuelwood) being utilized in and from the Sundarbans, in qualitative and quantitative terms.

- Evaluate the present utilization standards for wood products and, where appropriate, recommend improvements.

- Evaluate the environmental effects of the forest harvesting and utilization activities.

**1995 – 97 Suriname**

Project: Strengthening National Capacity for Sustainable Development of Forests on Public Lands. Employer: FAO. Duty: Policy and Forestry Development Specialist and Project Manager. Main work:

- In collaboration with project specialists and consultants and with national professional counterparts, identify the main environmental, social, forestry, institutional, administrative, economic, financial and legal issues related to sustainable use of the Surinam forest resources.

- Assist the Government in clearly defining the national goals and priority issues to be addressed in the process of policy formulation for forest resources.

- Draft a policy framework that guides the Government in the development of the forestry sector.

- Train and assist government officers and personnel of the Forest Service in the formulation, adoption and application of the proposed policy framework.

- Ensure that the project consultants produce the agreed outputs on schedule for:
  -training public officers on policy formulation
  -launching the forest resource policy formulation process
  -preparation of a draft policy concerning the national forest resources

- Act as project coordinator for interaction with national officers and professional counterparts in the Ministry of Natural Resources and the Forest Service.

- Provide continuous liaison with project consultants and with FAO in Rome and Port of Spain.

- Coordinate preparation of the final reports and prepare supplementary reports.

- In collaboration with the Ministry of Natural Resources, prepare proposals for two new forestry projects now funded and scheduled for implementation in early 1997.

- Coordinate with and provide assistance to the Ministry of Natural Resources and the Forest Service regarding activities, developments and environmental issues affecting the forestry sector in Surinam.

- Together with representatives of the Ministry of Natural Resources and the Forest Service, modify the FAO Forestry Advisory Assistance Project document which had been submitted to the Ministry.

- Develop a Schedule of Activities and Terms of References for the FAO Forestry Advisory Assistance Project.

**1997 – 98 Suriname**

Project: Forestry Advisory Assistance to the Ministry of Natural Resources. Employer: FAO. Duty: Chief Technical Advisor and Project Manager. Main work:

- Coordinate with and provide assistance to the Ministry of Natural Resources and the Forest Service regarding activities, developments and environmental issues affecting the forestry sector in Surinam.

- Update and revise scheduled project activities and the project budget.

- Develop the Terms of Reference for the different consultant inputs in the project, and in coordination with FAO staff in Rome, Port of Spain and Santiago, select the national and international consultants to do the work.

- Select an organization to do the Forest Classification / Remote Sensing work for this project and, in coordination with the FAO Legal Division in Rome, negotiate the contract.

- Orient and advise the consultants, check their work and coordinate the activities of the consultants and other personnel involved in the project work.

- Plan, manage and coordinate the project activities.

- Assist the Ministry of Natural Resources in establishing the ”Foundation for Forest Management and Production Control”, an organization seriously needed to implement proper planning and control of the many logging operations active in the forest areas.

- Assist the Ministry with informing national and international NGO’s of the Ministry’s forestry related activities.

- Support and advise the Ministry in the evaluation of a large proposed wilderness area and in determination of the boundaries of the area.

- Work closely with key personnel at the Ministry of Natural Resources and the Forest Service in coordinating the project work.

**Some personal comments**

Forestry, especially the international consulting part of my forestry career, has been a most interesting and rewarding field of work. My consulting work has taken me to many interesting and remote places. It is in the remote places or the countryside, not in the big cities, one sees what the people and the country are really like. In addition to fantastic experiences related to the natural environment, I have met and worked with many very fine national and international people. My assignments have been very challenging and have often taken place under demanding conditions and difficult circumstances, but they have been very rewarding.

# Under my umbrella in the Amazon rainforests

*By Torgny Bergström, Associate Expert for FAO, in Brazil 1976 – 77*

*This text has been translated and slightly modified by Torgny Bergström from an article he wrote in Swedish for U-landsskogisen of SLU, nr 6/1976/SN.*

## Introduction

I've been in Curua-Una for two days. The town Curua-Una is situated at Curua, a tributary to the Amazon River, five hours by speedboat downstream the bigger city Santarém and 300 km upstream from the Amazon Delta at the Atlantic Coast. It isn't that terribly hot, but quite humid, 100% humidity when it rains, 97-98% in between. As soon as you move, and sometimes even when you are just sitting, the sweat is pouring from your body. Everything is moist, if it isn't wet. Soaked. We spend our days in the forest, classified as tropical high rainforest. It is dry season, but even then it rains at least once a day. Torrential rain, with emphasis at torrential.

## Introducing modern logging

We, FAO (Food and Agricultural Organization of the UN) and SUDAM (Superintendencia Desenvolvimento de Amazonia, Amazonas development agency), are running an experimental logging method, using modern, fast, wheeled vehicles instead of traditional crawler tractors. To our help we have a skidder – a tractor giant weighting lots of tons, able to move logs up to 14 tons. Not all logs are that heavy. Most are lighter, but there are those weighting a lot more. Cut into appropriate length, they look as high as they are long.

In "normal logging" only one or two species are cut; that is often called "creaming". Our project intends to show that all trees can be used so we take out 50 – 60 species as a start. Minimum size is 45 cm at top. But only heartwood! Sapwood doesn't count. The logs are cut below the first branch. What's left - with both methods - is an impenetrable mish mash of branches, lianas, split wood and one and a half meter high stumps. But our "fifty-species-strategy" yields more wood per hectare.

## Grouping species together

We will take the logs to the sawmill in Santarem, saw them and sort them in four to maybe ten "lumber groups" with about same colour and physical properties. To work out the grouping, we have a wood laboratory in Brasilia, testing strength, specific weight, silica content, hardiness and other significant parameters. So instead of marketing Itauba, Frejo, Masaranduba, Mahogany etc, our goal is to sell "Medium brown Brazilian panel wood" "Light Brazilian construction lumber" or "Decay resistant heavy construction lumber".

**The Para Nut Tree is protected**

We leave one species, as it is protected. It is the tree that gives the Para nuts, *Castanha do Para.* The tree is one of the giants in the Amazon, over 50 meters high with light, brownish wood. The nuts are crammed into a bigger nut, a coconut lookalike. The shell is extremely hard and almost impossible to break. Best is to use your machete to hack it open. Then you can enjoy the bright, juicy, white, fresh nuts.

Around you, the vegetation is like a dense green wall, on which the drops from the last rain pauses on a leaf for a while before they take the last jump down to brown red lateritic clay of the forest floor. From all directions one can hear the sharp and crystal clear whistle from the character bird of the forest, looking like a thrush, but with a sound as sharp as a sewing needle. Ants of all sizes are seen. From small ones, almost too small to be visible (but painful to experience), over normal sized ants, laboriously carrying pieces of leaves, to inch-long, black ants with scorpion poisonously bites. Ants on the ground, ants on twigs and ants in the trees. Sometimes you can also see fan size butterflies, so intensively blue that they are almost invisible.

**The road is a slippery mud soup.**

The logs, after being skidded out, are transported down to Curua, a tributary to the Amazon River. It's just that what should be used as a road is a slippery mud soup. Our hope is that it will dry up – meaning, not raining that much, giving us possibility to ditch off the water.

At the river the logs will be loaded onto a barge (most of the logs are "sinkers", heavier than water). The problem of the day is how to make a five ton log jump two meters, onto the barge. The excavator has tried to dig a "pocket" in the riverbank, where we'd planned to lay the barge and then roll on the logs. But the sand is too loose and slides into the river …..

**More than half of the worlds freshwater**

The Amazon River is enormous. With tributaries it contains more than half of the freshwater in the world. Just the tributary (a small one) where Curua-Una is situated is as wide as Klarälven. One can almost not see the other side of the main Amazon River. On some places it is 18 kilometers wide. Oceangoing ships sail up to Iquitos, Peru – ¾ across the South American continent. That distance equals Stockholm – Rome.

People live their lives on, at and from the river. In canoes, on tug boats, houseboats, sailboats and passenger ships. In houses on the banks or built on long poles in the "varzea", the yearly flooded areas. The river is full of shrimps and fishes of all kinds and sizes. The riverbanks provide an excellent grazing for ordinary cows or imported water buffaloes. Livestock dealers come by ship and buy the cattle. Sea cowboys, tallyhoooo …..

**How long will the Amazon forests last?**

The Amazon basin–the largest rainforest on earth – for how long will it last? Millions of people – poor settlers, cattle breeders, enormously rich plantage builders and loggers are

chewing in at the jungle along the Amazonian "highways". They are clearing huge areas indiscriminately, burning the slash in the dry season, leaving no covering vegetation.

People are cultivating beans, maize and finally cassava for some years. After some time they abandon the now depleted land with no nutrients left. The nutrient content in the lateritic red clay or in the podzolic sand is low, and the ever pouring rain does what it can, to further wash it out. So, after three, four years the "cabocolos" = settlers move and slash and burn more forest to survive.

The transformation of the Amazon is inevitable. Migratory people are practically unstoppable. SUDAM knows that. It foresees in its perspective plans that huge areas will be cut down as roads penetrate the forest and settlers and cultivators move in. In short time, the Amazon area will be transformed into cattle farms, soya bean fields, plantations and shifting cultivation areas. On this road to the future, huge amounts of wood will be felled, burnt or just left to rot.

So instead of just slash and burn, why not use the timber? Take care of what's possible. At least saw the wood and sell the lumber. And replant, reforest, where possible.

**We just need …**

We just need roads, lorries, sawmills, skilled people, detailed knowledge of wood properties of the literally thousand species that will be felled!

Well, that's our project. Me, the other Swedish forester *Harald Matsson-Mårn* and our Brazilian counterparts stand here in the beginning of that development with one skidder, one excavator, one grader and one Scania lorry to log and transport the wood. Eventually it will lead to planks being nailed into new houses or exported to earn export incomes. Others in the project run the wood laboratory and the sawmill, to analyze the properties of the wood and to saw the logs. And, at the end, maybe reforestation. A Belgian silviculturist with long experience from Congo will try to get new forest with help from an American and a Dane.

We have a lot of work ahead of us …….

Wildlife corridor in agricultural landscape in former forest land in Rio Grane do Sul, Brazil (Photo Anders Malmer)

## To work for Aracruz Celulose Company in Brazil.

*By Louis Carbonnier, Field Coordinator for Jaakko Pöyry, in Brazil 1975-79*

### Introduction

In January 1976, I arrived in Aracruz, a small town at the Atlantic coast 80 km north of Vitória, the capital of the state of Espirito Santo and some 500 km NE of Rio de Janeiro, Brazil. I was very thrilled to start this assignment because I had learned a lot about the project, both through my previous employer FAO and through my preparation period in Europe the previous three months. I knew quite a lot about the technical issues, but I was very eager to see it in reality, because most of what I had learned was very positive and promised to be a great success.

Another reason for my excitement was the fact that this was my first job in the private sector. After graduation as a Swedish Forester I had spent three years with Domänverket (Swedish Forest Service) and almost five years with FAO in Colombia and in Rome. It was with mixed feelings that I had joined the Finnish consultant firm Jaakko Pöyry (JP) - on one hand I had seen very weak inputs from international consultants in Rome, often implementing their assignments in developing countries with very little commitment for sustainability, but on the other hand JP had a reputation of being the world leader in forest consulting.

JP, through its office in Stockholm that at that time had the leading forest expertise in the JP Group, was responsible for planning and developing the wood supply for what was to become the largest single line pulp mill in the world - Aracruz Celulose S.A. The technical know-how partner for the pulping process was the Swedish company Billerud and JP, Helsinki, was responsible for designing and building the mill. I was responsible for coordinating the forestry field work using a large team of specialists from JP on short term assignments. My project director, stationed in Stockholm, *Göran Lönner*, had already completed a large study concluding which harvesting systems were to be used to feed the mill with 1.6 million $m^3$s ob per year. Now the task was to implement these system**s.**

### Amazing yields

The original forest plantations to be harvested were established with three main *Eucalyptus* species: *E. grandis, E. saligna and E. alba*. In 1976 the plantations covered an area of about 40 000 ha, but was continuously expanding and were by 2005 over 200 000 ha of company owned plantations. By then the company also controlled large areas of plantations established as joint ventures with local farmers. The long term aim was that such plantations would provide about 25% of the wood supply in the future. In 2009 Aracruz Celulose, at that time one of the largest pulp producers in the world, was merged with VCP forming a new company called Fibria.

An intensive genetic improvement programme had already in 1977 produced clones of a hybrid between *E. grandis and E. urophylla*, commonly called Urograndis, which was to replace the original species. Until today this clone has proven to be a winner in climates from the Amazon basin to Southern Brazil and in many other countries. The average growth at the time I arrived was estimated at 27 $m^3$s ob/ha/a. Three years later, through improved silviculture and genetic improvement we estimated the $MAI_{max}$ to be 38 $m^3$s ob/ha/a. A daunting number for a Swedish Forester who, a couple of years earlier, had been an Assistant Forester in Kalix, at the Arctic Circle, working in a forest with an average yield of 1.2 $m^3$s ob/ha/a.

The genetic work by Aracruz Florestal S.A. was acknowledged in 1984 when it received the Marcus Wallenberg Prize for "their pioneering work leading to significant scientific and technological breakthroughs in developing commercial forests based on cloned Eucalyptus. Their methods have stimulated world-wide emulation. The high productivities achieved will reduce pressures on natural forests."

**Harvesting system**

At my arrival we had already shown, through extensive field tests and time studies, that the most cost efficient harvesting system was motor-manual felling, de-branching, bucking and piling the 4.5-6 metre long logs, off-road transport with forwarders and on-road transport by large trucks loaded by separate tractor-mounted grapple cranes. We were also going to chip the tops and branches, after they had served as a mat on the ground to protect from soil compaction, with mobile chippers and, through a container system, deliver the chips as fuel in the mill. The last operation was necessary because the bark, which normally would be used as fuel, was to be used in the pulping process.

After a couple of years, when clones developed for minimum crown length and maximum pulping yield were being used, it was decided that the organic material of the harvesting residues was better used as soil improver and that removing the bark before feeding the digester increased the overall profitability of the pulping process.

This system was quite common especially in the Nordic countries at the time, but in Brazil it was a complete novelty, looked upon with very critical eyes from the existing forest industry. Their dominating system was to bring small trucks into the stand and load 2.2 metre logs manually. However, we had succeeded to convince the management of the Company that our system was bringing the fibres to the mill at the lowest possible cost. Added benefits were the possibility to introduce new personal skills for the workers, thereby raising salary levels, and the flexibility of the system for further mechanisation in the future.

However, there were a couple of major challenges:

- No machinery could be imported to Brazil. All of it had to be developed by the local industry.
- All labour was to become permanent employees and therefore to be supplied with proper safety equipment, also made in Brazil, and trained to operate machines until then not seen in the country.
- We were not allowed to start operations, including training, until all the wood could be used for the process, so all design problems had to be solved at the drawing board rather than through further field tests.
- The intensity of the operations required efficient and flexible planning systems in order to maximise growth of the plantations and to balance concentration of operations against traffic problems (in average some 180 trucks were to arrive at the mill each day**).**

## The importance of being social

So, no time could be wasted and I started planning activities with a frenzy very little appreciated by the Aracruz staff. In fact, my popularity was so low that whenever I entered a room most of the people left. After three months I faced the consequences and suggested to *Göran* that I should be removed from the project because nobody wanted to listen to me. After having reviewed what I had done so far he praised my work and suggested I should now dedicate some time to make friends. I was so ashamed, because that was one of the main lessons I had once learned in the SIDA preparation course, but I thought that in the private sector efficiency would be the priority. *Göran's* suggestion gave almost immediate results. After a couple of weeks I was invited to have lunch together with the staff in the company guesthouse rather than sitting alone at the town restaurant. It also helped my Portuñol moving towards the Brazilian spoken Portuguese. When, after more than three years (my original contract was for one year) the CEO *Dr. Leopoldo Brandão* told the staff that they now would have to manage without "Cabonyé", we finally parted as friends for life. I have since then returned many times for various assignments and always been greeted as part of the family.

## Developing of a new forwarder

Probably the most difficult challenge we had to face was to develop a forwarder suitable for Aracruz conditions. The Finnish company Valmet had a clear advantage as they were already producing various sizes of agriculture tractors in Brazil. But after a Finnish engineer had declared that they were not going to change their design of a Finnish forwarder to match our specification (longer loading area), they missed an order for some 30 machines and later replacements.

Instead, the Brazilian company ENGESA, producing vehicles for the army, entered the bidding race with their knowledge of making terrain vehicles with articulated steering. They won. They managed to produce a prototype in ten months and that machine later exceeded by three times the life time we estimated and easily achieved our very ambitious productivity target (18 $m^3$s ob/hour).

Piece by piece we managed to have all components of the harvesting system ready for start-up during the end of 1978. Some of the products developed by Swedish companies, establishing themselves in Brazil, were later sold in the Nordic countries.

## Training of key staff

The harvesting systems we developed were the best possible at the time the mill started operating. However, with technological development and increasing salary levels, further mechanization was likely to be justified in the future. We therefore organised an extensive training programme, including visits to different machine producers and forest companies in Sweden, Finland, Portugal, Canada and USA for key staff members.

The primary objective for this programme was to create a bank of ideas and practises that would enable them to further develop their operations. Already six years afterwards, the initiative to start development of the first Brazilian made harvester was taken by Aracruz Florestal staff. This, and other initiatives, enabled them to continuously stay ahead of competition and for many years be regarded as the company with the lowest wood cost in the world**.**

The training programme, initiated by NORDFOR, a Swedish company doing the “training of trainers”, worked very well. JP was all the time insisting on the importance of safety equipment and the visionary management of Aracruz Florestal agreed, but there were many individuals doubting if we were ever going to be able to introduce e.g. helmets with ear protection in the heat (annual average temperature around 25°C). We were however rewarded when it turned out that the helmets were actually worn in the local bars. They had become a status symbol as a sign that the owner was an employee of Aracruz Florestal and had undergone the training programme.

**Developoment of a planning system**

The development and introduction of the planning systems required for a smooth running of the operations was a task that fell entirely on me. I designed, coded and installed systems for strategic planning, operational planning, calculation of growth functions using a non-linear regression model and the processing of the annual forest inventory. All this was achieved on an IBM computer with an internal memory of 16 kbytes!

As a consequence of this limitation, I had to divide the processing of e.g. the strategic plan into 14 separate programs with intermediate storage in 16 files. In the end the complete system worked fine. I was given 10 months to document the systems, which later turned out to be a good investment for the company as it enabled them to reprogram the systems on three consecutive platform changes, making the life time for some of the systems up to fifteen years.

**Our roads worked!**

One month before mill start-up in 1979 when the forest operations were already in full swing to build buffer storages, we got clear evidence that our efforts had given result. During that month it rained without stopping. After three weeks the area was declared "state of emergency" and most public roads were closed. Fortunately for everybody, not the least for the foresters, the forest roads designed, built and tested carefully under supervision of our team, turned out to be the only roads in the area that withstood the pressure. All traffic to the mill was redirected through the forests. All forest operations continued without interruption during this period, which gave the staff a healthy boost of confidence**.**

**Social and environmental aspects**

I came to Aracruz from the international development world. My conviction after Aracruz is that real sustainable development can only take place if it is driven by economics. But there must be a balance between economic, social and environmental aspects to make a project sustainable.. Of course we saw to it that the other legs of sustainability received proper attention. On the social front the Aracruz Group built and run schools, hospitals and houses for the employees, as well as supported other significant investments in the community.

The environment was a key issue very early. The mosaic concept, where the intensively managed plantations are broken up by lungs and corridors of natural vegetation, was practised from day one of the plantation establishment (1967). The natural forests were also enriched by planting fruit trees producing food for birds and other animals. Hunting in the

forests was forbidden and actively monitored by forest guards on motorbikes. This resulted in the fauna increasing both in population and in number of species.

## Conclusion

The years in Aracruz brought a lot of difficult challenges and hard work during long hours, but I can easily say that they constituted the most satisfying professional period in my life. I used to be quite proud about the fact that the majority in the company did not know that I was a consultant paid for each hour of input. They simply regarded me as a part of the team that within a short time had built an efficient and successful wood supply organisation which became a model for many other companies in the world.

Amazon forest converted to grazing land in Mato Grosso, Brazil (Photo Anders Malmer)

# Veracel Celulose in Brazil

*By Anders Tosterud, Environmental Manager for Veracel Celulose, in Brazil 1993 – 99, and Sten Norén.*

*Anders first wrote a story in Swedish, Sten adjusted and translated it into English; after further adjustments by Anders he approved it/SN.*

## The area in the 1980s

The coastal region close to the town of Porto Seguro, 800 km northeast of Rio de Janeiro in Brazil, was in the 1980s a devastated land with only small remnants of the biodiversity-rich Atlantic Rainforest. It was at that time one of the poorest and most un-developed regions in Brazil .The area was known for being law-less, it was easy to get hold of weapons. Big state owners often hired "pistolerios" to get rid of neighbours and small farmers who prevented them from expanding their ranches. The legal ownership of land was unclear and provoked a lot of conflicts, often violence.

Extensive ranching and sawmilling were the two dominating economic activities. The sawmills got the lumber form the last remnants of the rainforest and the ranchers occupied the devastated land that the loggers have left. The Veracel saga is about how this poor and miserable region in less than 30 years could be transformed to a prosperous society in strong development.

## Plantation of *Eucalyptus* starts

After an initial pre-feasibility study, the Brazilian construction company Odebrecht started Veracel in 1991. Land was bought and planting of *Eucalyptus* started in 1992. It took two years of negotiations and legal proceedings to clear out the ownership for some of the land bought. Only approximately half of the land could be planted, the rest was set aside for conservation of rainforest and water creeks, steep terrain, fire lanes, roads and areas where the soil-conditions were too bad for *Eucalyptus*-growing. Already from the start Odebrecht contracted the best specialists in Brazil regarding soil-preparation, genetics, silviculture and forest management. Their participation resulted in that Veracel soon became a benchmark among forest companies in Brazil,

## Sustainability and environmental questions

There were three questions which dominated the planting activities during the 1990s:

1. Soil management, that is soil-classification, land-use, fertilization, soil-preparation, monitoring and finally how to conserve the productive capacity of the soil. The soil and climatic conditions for high photosynthesis are extraordinary in this area, but some soil-types were considered too weak to guarantee good growth.

2. Development of suitable genetic material for planting. Vegetative propagation of *Eucalyptus* was under development, but knowledge of suitable hybrids suitable for

the region was lacking at that time. A big program was developed with support from the best researchers in the world.

3. Sustainability, environmental questions.

Right from the start of Veracel, there were a lot of questions and accusations about Veracel and Veracels impact on the region. Various NGOs accused Veracel for all kinds of environmental problems, e.g. cutting of rain forests, polluting of streams, drying up of the groundwater, impoverishment of biodiversity etc. After a careful studies we could show that only around 10 ha of rainforests had been erroneously cut compared to the 10 000 ha for which we were accused.

The company was also accused of having forced small farmers from their land to become landless squatters. But it was rather the opposite; Veracel supported the farmers to plant trees on their own land. Big public hearings were held with hundreds of angry participants. At one time there was a great risk that the project would have been stopped. Finally we got the environmental permits after the Governor of the State had intervened.

**Industrial partner**

After some years of plantation it was time to find an industrial partner. It was not so easy in spite of the fact that the plantations were among the best in Brazil. The search for a partner started in 1994/95. Finally representatives of the Swedish forest company STORA came on a visit, more by chance. The visitors had low expectations on what they would see. But they became enthusiastic about Veracel after having seen a plantation of a clone of *Eucalyptus grandis urophylla,* which at the age of three years had a current increment of 80 m3/ha/year! In 1999 STORA became a 50% owner.

One year later Odebrecht had to withdraw due to financial problems. After a long negotiation Brazilian company Aracruz Celulose, went in to own 50%. It had just finalized the building of its own factory, so an almost complete project organisation could be transferred to plan and constructs the new pulp mill. The Veracel pulpmill started in 2005 after less than two years of construction, a world record at that time! Since the start-up the mill has produced high class short fibre wood practically without any problems.

**Veracel today**

In early 2 000 STORA became Stora Enso and in 2009 Aracruz was bought by the company Fibria. The two companies now own 50% each. Stora Enso and Fibria are among the largest producers of *Eucalyptus* pulp in the world, both want to keep their positions. Now, 2014, Veracel can double the capacity of the mill; fibre resources are available. But the two owners cannot agree to go ahead. StoraEnso has started a new pulpmill in Uruguay and Fibria wants to expand another of its mills in Brazil.

Now Veracel has 70 000 ha of *Eucalyptus* plantations and almost the same area of protected rainforests. The factory produces one million tons of pulp per year and is the most profitable pulp industry in the world. Veracell has created 20 000 new permanent jobs and the quality of life has been raised for 50 000 - 100 000 people. The region is now one of the more prosperous areas in north-eastern Brazil.

# Forests & Indians in Guatemala

*By Carl Henric Kuylenstierna, Associate Expert for FAO in Guatemala 1975-76*

*This text has been translated and slightly modified by Carl Henric Kuylenstierna from an article he wrote in Swedish for U-landsskogisen nr 6/1976/SN*

*During 1975-76 I worked as associate expert at a major FAO-project in Guatemala with the aim to strengthen the forestry sector. After having returned to positions at Mälarskog and later Skogssällskapet in Sweden, I had the privilege to also take on many interesting short term assignments in basically all the countries in Central America. The Philippines and Pakistan could later be added to the list of assignments, which were often focused on evaluation of forestry projects. The report below was written for U-landsskogisen in 1976 during my time in Guatemala and still, at least until a few years ago, there is a forest owners' association in place as a result of the project.*

## Guatemala´s geography and forests

*"Take a bunch of brown cartouche paper, crease it well, smooth out the edges, then splash green paint in the center and more generously along the edges and the map in relief is complete. This is how the Republic of Guatemala broadly looks like".*

The description is taken from a travel book by *Prince Wilhelm* in 1920. Fiftysix years later in 1976 "as a follower of Prince Wilhelm" one finds that a lot is still similar, even social conditions. Therefore I will quote the Prince further down in this report.

Guatemala borders Mexico in the north and El Salvador and Honduras in the south. Five million Creole descendants, Latinos and Indians populate a land area comparable with less than a third of Sweden. The climate zones are sharply defined and within a few hours you go from tropical virgin forest and intense heat to cold areas with few species and poor nature. At an altitude of approx. 1500 to 3000 meters, which is the central area of the country, there are one million hectares of coniferous forest including approximately 15 Pine species. It is in these forests, mainly owned by Indians, that FAO's advisors work together with INAFOR's (the State Forest Department) engineers.

## A broad FAO-project

The project is relatively comprehensive with approximately a dozen experts and associate experts from FAO working with anything ranging from forestry inventory to sawmill development. In addition to the work at national level the project includes a demonstration area (of c. 7000 hectares) where a forest cooperative was set up, a sawmill installed and modern forestry techniques and equipment applied. In the international team of experts from Chile, Peru, Holland and France, *Torbjörn Hederström* and I are the Swedish contribution. The Swedish group will later expand to include *Per Christiansen* and *Bertil Kastberg* arriving to work with logging and timber transportation.

My work is focused on forest economics and on the setting up and development of forest cooperatives. The President of Guatemala, a Norwegian descendant named *Kjell Laugerud-Garcia,* strongly supports the cooperative movement as an alternative to socialism and as a means to develop the rural areas. The political climate is

relatively stable and not least there is support among the rural population. The support from the Government is however more of a moral nature, so in practice there is not much financial help or equipment reaching those needing it.

For almost a year now I, my Guatemalan counterparts and *Torbjörn Hederström* have been travelling around in a jeep, on horseback, on foot etc to visit forest landowners of all sorts; private owners with properties from 5 up to 1000 hectares, representatives of village and communal forests as well as companies owning forests. Three forest cooperatives have been constituted which are the pilot cooperatives which the entire project is focused on.

The forest is quite similar to Swedish pine forest despite the fact that the steep hillsides offer difficulties with logging and transportation. The forest destruction is widely spread as burning and cultivation of corn cause problems with erosion. The forest cooperatives might hopefully increase the stumpage fee so that forestry can compete with other use of the land and provide work and by that reverse a dangerous trend.

**Indians are descendants of the Mayans**

In Central America it is far between"words and deeds" and "the law and the sword". The Indians are descendants in a direct line from the Mayans. In the highlands they are poor but proud, independent and only moderately inclined to accept help to develop growth and progress. Possibly they have been cheated too many times by false promises. Technical support and advice is accepted however. Traditions and beautiful costumes, different from village to village, and going back hundreds of years are still kept.

"*Along the roads one is met by caravans of Mozos in their picturesque and colorful costumes, the men carrying the whole sale on their backs secured with a strap around the forehead and the women with baskets or packs on their heads."(Prince Wilhelm).*

75% of the population is illiterate and the birthrate is high as well as child mortality. However, the pretty costumes and the friendliness give a superficial impression of an untroubled and pleasant life.

*"Second to brutal and dishonest men hard liquor is the Indians' worst enemy. Men and women get drunk at the same rate and become unruly and pugnacious. The machete then sits loosely in their belts and murder is the order of the day".(Prince Wilhelm).*

San Juan Ixcoy is a little village on the border to Mexico where we have established a forest cooperative. Last Sunday, while we were there to discuss forestry issues, a man was stabbed to death with a machete. As public transport is limited we had to drive the corpse, the mother and the local prosecutor to the departmental capital for an autopsy. The incident was most likely mentioned in only three sentences in the local paper Prensa Libre.

**Earthquake!**

In thirtyfive seconds just before dawn on February 4, 1976, much of the country was in ruins in one of the worst earthquakes in the country's history. 25 000 people were killed and over a million became homeless. Although we were fortunate enough to live in well-

built houses and only mildly affected I can honestly say that during those moments we believed that our last hour had come. *Prince Wilhelm* describes an earthquake in 1928 in Guatemala:

*”Among the local population death was indescribable. Those who had not been killed immediately were homeless and ran wailing in the streets terrified that the disaster would start all over again. The misery celebrated triumphantly”.*

This account is relevant also today in 1976. Continuing aftershocks are keeping the population in a psychological iron grip and further property damage is caused. Not many have slept well lately. As anyone can imagine this disaster affects work and way of life on the whole. The project has generally speaking kept its original focus, although at this stage one has had to concentrate primarily on production of wood and reconstruction of houses. Before the rainy season begins in mid-May all resources are used to open the road system and to provide shelter to people.

Well, at this point I am getting used to earthquakes, volcanic eruptions, shootings etc. It is undoubtedly a very fascinating and colorful country we are working in.

Coffee agroforestry in Costa Rica (Photo Anders Malmer)

# Restoration of deciduous forests in Costa Rica

*By Karin Gerhardt, researcher for Uppsala University in Costa Rica 1989-1994 and Sten Norén.*

*This text has been taken from an article written by Karin Gerhardt in in Swedish in U-landsskogisen nr 18/1990. It has been adjusted and translated by Sten Norén and approved by Karin /SN.*

## Deforestation in tropical areas – a big problem

Deforestation of tropical forests, particularly mature rainforests, is an environmental problem which concerns many people and organisations all over the world. The fantastic richness and diversity which exists in these forests is very difficult to restore. On the other hand, can you request that often poor countries for environmental reasons should refrain from the income tropical timber can give? And how can you demand that poor people, who are struggling to survive, should conserve the natural environment?

If local, often shifting cultivating people should refrain from cutting the trees they have to be given economically interesting alternatives. They can for instance utilize some of the vegetation without felling the trees by harvesting fruits, gum or oil from some of the trees. To grow agriculture crop together with trees, agroforestry, is another possibility which can lead to more permanent land use in an environmentally acceptable way. In some areas tourism can give an alternative income.

## Forests in Costa Rica

Costa Rica, a middle income country in Central America, has still quite much forests left compared to other similar countries. However, the farmers still tend to cut down the forests in order to get farmland and grazing land. Some say that the forests outside the national parks will be gone within a few years.

The forests are to a great extent privately owned either by farmers or by forest companies. Some companies use lenient harvesting methods and care about reforestation of attractive species. Others do not; my impression is mixed, depending on whom you talk to and which region you visit.

## Guanacaste National Park

The Costa Rican Government has been quite wise to set aside relatively large forest areas as national parks. One of these parks which recently was set aside in north-western Costa Rica is Guanacaste National Park. This park is 700 km2 and is connected to two other national parks which make the total protected areas bigger. It consists of volcanoes, mountain rainforests, lowland dry semi-deciduous forests, grazing-land, mangrove forests and other beach vegetation. The dry forests consist of former grazing-land and selectively logged forests. Due to the logging some tree species have become rare locally.

In this park a new management concept is under development, initiated by the Government, an American ecologist and a private environmental fund. SIDA is also

involved. The concept is to preserve the nature without closing it for the local people. It is hoped that it will become a model also for other parks and also in other countries.

**Objectives and resources**

The management objectives of this concept can be summarized as follows:

- to save species and habitats

- to serve as a gene bank

- to create within the Park demonstration plantations of indigenous trees as a model for an ecologically sustainable forest management

- to actively work with measures to stimulate reforestation and restoration, fire protection, replanting and research

- to function as a living field laboratory for students and researchers in environmental education

The main human resources for carrying out these objectives are:

- Some park guards who are trained as plant and animal taxonomists. They also work as guides for visitors, particularly eco-tourists. They are trained in the Guanacaste Park and today you will find them also in other parks in Costa Rica.

- Biologists who work inside and outside the park with the surrounding farmers´ land use problems and their relations with the Park. They are also taking children from surrounding schools into the park areas to demonstrate and activate their interest and engagement in the nature.

- An active park administration which initiates congresses, knowledge exchange, development of ecotourism and stimulates a positive environmental thinking in general. An important issue is that also the local population should get a share of the income from eco tourism.

**Activities**

One activity which has been initiated is exchange of knowledge between local societies. Farmers and fishermen from Guanacaste have travelled to the southern part of Costa Rica and exchanged experiences and problems. Later the farmers from the South came to Guanacaste and got many ideas to solutions of old problems.

In August 1989 the Park arranged a regional congress on land use and development. In December 1989 there was a follow up seminar on environmental protection and agriculture. My impression is that that the awareness of land destruction and measures to remedy this slowly is under development in Costa Rica.

## Forestry research

There is quite much forestry research going on in Costa Rica. CATIE (Centro Agronomico Tropical de Investigation y Ensenanza) is a regional centre for the whole of Central America and has research and education on among other things agroforestry and silviculture. The University has research on mangrove forests. There is a Forest Institute, but it mainly deals with training. La Selva is an American field research station which deals with ecological research in rainforests. They have much basic research but also applied projects e.g. on selective cutting in natural forests.

## Two SAREC-projects

The dry, deciduous forests are characterized by a half-year long dry period when 30-80 % of the trees shed their leaves. This limits the plantation period and makes it difficult for the plants to survive the first dry season. Since 1988 there were two research projects in dry forests in Guanacaste Park which are financed by SAREC (Swedish Agency for REsearch Cooperation with developing countries – since 1995 a part of Sida). SAREC also cooperated with CATIE.

The first project is about reforestation in dry secondary forests and on recently abandoned pasture land. The dry forest has many valuable tree species which can be used for construction, furniture, carpentry etc. Four common tree species, *Cederela odorata, Swietenia macrophylla,* both light-demanding, and the shade tolerant *Hymenaea courbaril* and *Manilkara chicle* were planted in the secondary forest and on the pasture land. Survival, growth and insect damages should then be studied and be compared with the development of natural regeneration of these species in the forest. This was my research which came to form the basis for my doctor dissertation.

When I evaluated the result in 1992 I found that the survival rates were rather low (3-10%) of all species except *Hymenaea* which had a survival of 40-55% on both types of land. Growth rates were low (<15cm/yr), possibly due to low precipitation in 1990 and 1991. All species grew taller in the pasture than in the forest.

The other project aims at finding more useful species for timber and fuel wood production. Different mixes of tree species, planting distances, bare root plants versus soil covered plants etc. are studied. This project is lead by a female Costarican forest officer with five male assistants – it works!

## Conclusions

**It is hoped that some of the ideas which are tested and practices here in Guanacaste Park may become useful e.g. in Amazonas and other areas where forests are being depleted. A more sustainable land use would be better both for the economy of the farmers and for the environment. Resources must also be given to restoration of degraded land.**

Forest, pasture and cultivation mosaics in Honduras (Photo Anders Malmer)

# Appendix 1: Swedes with experience of forests and forestry/agroforestry in Asia and Latin America

(Including non-Swedes having worked in Swedish-supported projects)

*By Sten Norén*

## Introduction

This list is mainly taken from the publication "U–landsskogisen", which was given out once a year by the International Rural Development Centre (IRDC) of the Swedish University of Agricultural Sciencies (SLU) during the years 1971–1990 and contained lists of those Swedes working with forestry in developing countries. Non-Swedes working in Swedish-related projects have also been included in this list, but country of origin has only sometimes been mensioned. Complementary information, particularly from the time after 1990, has been derived from direct contact with many individuals, consultant-firms and other sources. Particularly I want to mention the complementary additions of persons working in Laos which *Calle Mossberg* has provided. This list is of course not complete, can never be, it contains sometimes old information and errors.There are over 300 names in the list now, October 2014, when I latest checked the list more carefully.

Only individuals with long-term (1 year or more) stay in countries in Asia, Oceania or Latin America have been listed here, that means no short-term consultants are listed. Many of the persons in the list have been working also in other countries, e.g. in Africa. However, that has not been noted here, as there already exsists another list containing those who have worked in the forestry sector in Africa. (see KSLA Tidskrift nr 2, 2011). Stay in headquarters in Europe or America in such places as e.g. FAO in Rome, ILO in Geneva or World Bank in Washington have not been included here. When not knowing "Type of work/position" I have written "Expert". People who have passed away are marked with (+). E-mail-addresses, when available, have mostly been taken from the "Matrikel" given out by the Swedish Academic Foresters Association, latest edition 2009-10.

| Name<br>e-mail | Employer | Type of work/position | Country | Years |
|---|---|---|---|---|
| Adlers, Lars (+) | FAO | Associate Expert | Peru | 1968-69 |
| Allard, Göran<br>allard.g@telia.com | Swedforest | Transportation Expert | India | 1979-80 |
| Almqvist, Rolf | Swedforest | Logging Training Expert | India | 1979-80 |
| Andersson, Hans | Scandiaconsult | Expert Inst. Building | Laos | 1998-2000 |
| Andersson, Kjell | Silvi Nova | Expert | Laos | 1987-89 |
| Arnborg, Tore (+) | FAO<br>" | Expert<br>FAO Res.rep. | Pakistan<br>" | 1964-68<br>1969-71 |
| Arnelo, Nils | Swedforest | Expert | India | 1983-86 |
| Aropunsavath, Frida | Scandiaconsult | Environment Expert | Laos | 2002-04 |

| | | | | |
|---|---|---|---|---|
| Attebring, Jan<br>jan.attebring@gmail.com | Interforest | Forest Inventory Adv. | Vietnam | 1988-90 |
| Atterfors, Per | FAO | Expert | India | 1966-67 |
| Axelsson, Jan<br>jan.axelsson@tietoenator.com | SIDA | Expert | Laos | 1989-91 |
| Backman, Mats<br>m.backman@telia.com | FAO | Associate Expert | Nicaragua | 1965-66 |
| Badenoch, Nathan *(American)* | Ramboll Natura | Socio economy Expert | Laos | 2004-07 |
| Bark, Leif | FAO | Associate Expert | Peru | 1964-65 |
| Barrish, Jan | Ramboll Natura | Associate Expert | Laos | 2005-07 |
| Bauch, Robert | Swedforest | Expert | Nicaragua | 1990-? |
| Bayona, Luis | ORGUT | Expert | Nicaragua | 2001-06 |
| Beijar, Lilly | SIDA | Expert | Nicara | 1989-90 |
| Bendz, Mårten<br>marten@bendz.nu | FAO | Project Manager | Nepal | 1989-92 |
| Bengtsson, Hans | Silvi Nova | Expert | Laos | 1987-88 |
| Berglund, Tyko | Swedforest | Expert | Nicaragua | 1985-87 |
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| Birath, Hilding | FAO | Expert | India | 1968-69 |
| Bjurulf, Anders<br>anders.bjurulf@norskeskog.com | Swedforest | Expert | Nicaragua | 1990- ? |
| Bjurulf, Svante | SVS<br>Swedforest | Volunteer<br>Expert | Nicaragua<br>“ | 1985-86<br>1987- ? |
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| Blakstad, Mats | FAO<br>Swedforest<br>“ | Associate Expert<br>Project Manager<br>FCP Coordinator | Surinam<br>Laos<br>India | 1973-74<br>1991-93<br>1993-95 |
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| | Own company | Forestry Consultant | " | 1978-80 |
| | Asian Dev. Bank | Forestry Specialist | " | 1981-88 |
| | Stenka For.AB | For. Man.Adviser | " | 1995-99 |
| | " | Senior For.Consultant. | Honduras | 1999-2000 |
| | GTZ | Team Leader | Indonesia | 2000-02 |
| | Europ.Comm. | Coordinator | " | 2002-04 |
| | Own company | Forestry Consultant | " | 2005-08 |
| | " | Project Leader | " | 2008-10 |
| | " | Forestry Consultant | " | 2011-present |
| Blychert, Gunnar (+) | FAO | Associate Expert | Malaysia | 1969-71 |
| | SIDA | Programme Officer | Laos | 1984-86 |
| | Interforest | Expert | Vietnam | 1987-88 |
| Bornhult, Peter | Silviconsult | Expert | Laos | 1986-87 |
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| | " | " | " | 2005-10 |
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| | " | " | Vanuatu | 1989-90 |
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| | Interforest | Training Expert | Vietnam | 1989-90 |
| Bång, Thorsten | Swedforest | Logging Train.Exp. | India | 1983-84 |
| Calub, Blesilda *(Filippino)* | Ramboll Natura | Farming System Exp. | Laos | 2004-06 |
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| (Portugal) | Interforest | " | Argentina | 1979-82 |
| Carlsson, John-Eric | ILO | Expert | Turkey | 1979-80 |
| | " | " | Fiji | 1989-90 |

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| Carlbom, Mats<br>mdcarlbom@telia.com | FAO | Associate Expert | Thailand | 1973-74 |
| Carlsson, Ingvar (+) | FAO | Expert | India | 1965-69 |
| Castiglione, Jorge | Swedforest | Expert | Nicaragua | 1988-89 |
| Cederwall, G. | FAO | Expert | Laos | 1983-84 |
| Celander, Thorsten | Interforest | Provincial Advisor | Vietnam | 1991-93 |
| Chadha, Skylark | Swedforest | Expert | Bangladesh | 1981-84 |
| Christianssen, Kai | FAO<br>“ | Associate Expert<br>“ | Chile<br>Ecuador | 1972-73<br>1973-75 |
| Christiansson, Per (+) | FAO<br>“<br>Swedforest<br>Interforest<br>Swedforest | Associate Expert<br>Expert<br>“<br>“<br>“ | Peru<br>Colombia<br>Guatemala<br>Colombia<br>Dom.Republ. | 1965-67<br>1969-72<br>1975-79<br>1981-82<br>1988- ? |
| Claesson, Anders | Silviconsult | Expert | Vietnam | 1979-82 |
| Coppin, Pol | Swedforest | Expert | Nicaragua | 1987-88 |
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| Danielsson, Birgitta | Scandiaconsult | Inst.building Expert | Laos | 1999-2000 |
| Davidsson, Herbert | Swedforest | Expert | Laos | 1986-88 |
| Degerlund, Ture | Swedforest | Transport Expert | India | 1981-82 |
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| Edgren, Margareta | Swedforest | Bihar FCP Coord. | India | 1985-88 |
| Egneus, Hans | Swedforest | Orissa FCP Coord. | India | 1985-88 |
| Ekman, Matts | Swedforest | Logging Training Expert | India | 1984-85 |
| Ekstrand, Lars-Erik | Swedforest | Orissa FCP Coord. | India | ? |
| Elvbo, Leif | Interforest | Expert | Vietnam | 1990- ? |
| Embreus, Esbjörn | Eget företag | | Brazil | 1984- ? |
| Enander, Jonas | WP-system<br>Silviconsult | Project Manager<br>Expert | Vietnam<br>Turkey | 1979-82<br>1983-84 |
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| | FEW Consultants | " | Philippines | 1971-80 |
| | Boliden | " | " | 1981-83 |
| | " | " | " | 1990- ? |
| Fidloczky, Josef | Silvi Nova | Forest Inventory Exp. | Laos | 1988-89 |
| Finne-Bergman, Sigbritt | Swedforest | Expert | Bangladesh | 1979-80 |
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| Finnsjö, Claus | FAO | Associate Expert | Western Samoa | 1967-68 |
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| | " | " | Colombia | 1970-72 |
| | " | " | Guatemala | 1973-78 |
| | " | " | Chile | 1978-83 |
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| Håkansson, Tony | Swedforest | Expert | Nicaragua | 1988-89 |
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| Jonsson, Lars-Ove | ORGUT | Expert | Vietnam | 1998-2008 |
| Jonsson, Stefan | Swedforest | Orissa FCP Coord. | India | ? |
| Jonsson, Tomas (+) | Elof Hansson | Expert | Brazil | 1984-85 |
| | Swedforest | Chief Technical Adviser | Laos | 1994-95 |
| | Ramboll Natura | " | " | 2001-03 |
| | " | " | Vietnam | 2009-12 |
| Jotland, Nils-Erik (+) | FAO | Associate Expert | Nicargua | 1965-66 |
| | Swedforest | Expert | Costa Rica | 1975-77 |
| | " | " | Dom.Rep. | 1984-85 |
| Jönsson, Jerker | Interforest | Expert | Vietnam | 1984-85 |
| Kaersgaard, Lars | Swedforest | Logging Taining Expert | India | 1979-82 |
| | Silviconsult | Expert | Laos | 1984-85 |
| Kardell, Örjan | Interforest | Ass. Expert Agroforestry | Vietnam | 1990-92 |
| Karlsson, Karl-Axel | FAO | Expert | Chile | 1964-65 |
| Karlsson, Stig | Interforest | Expert | Vietnam | 1979-80 |
| | Swedforest | Logging Training Expert | India | 1983-84 |
| | Interforest | Expert | Vietnam | 1985-86 |
| Karlsson, Pål | Swedforest | Associate Expert | India | ? |
| Karlsson, Tommy | Philippines Match | Expert | Philippines | 1981-83 |
| Kastberg, Bertil | FAO | Associate Expert | Guatemala | 1976-78 |
| | Swedforest | Expert | Dom.Rep. | 1988- ? |
| Kent, Geoff | Silvi Nova | Expert | Laos | 1989-91 |
| Kempe, Lars-Erik | Silviconsult | Expert | Laos | 1984-85 |
| Kjölsen, Nils | Silviconsult | Expert | Laos | 1984-85 |
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| Larsson, Roland | Interforest | Expert | Vietnam | 1986-87 |
| Larsson, Sven-Gunnar (+) | FAO | Associate expert | Jamaica | 1969-70 |
| | " | " | " | 1971-72 |
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| Lif, Haldo | Silviconsult | Expert | Laos | 1986-88 |
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| Lindgren, Eric | Interforest | Expert | Vietnam | 1983-84 |
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| | “ | Expert | “ | 1993-94 |
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| | “ | “ | Brazil | 1974-78 |
| | “ | “ | Malaysia | 1978-82 |
| | “ | “ | Bangladesh | 1983-86 |
| | UNDP | “ | Bhutan | 1987-88 |
| Meija, Carlos | ORGUT | Expert | Nicaragua | 2006-10 |
| Metsävainio, Arto | SVA | Volunteer | Nicaragua | 1988-89 |
| Micski, Josef | Swedforest | Res.Rep. | Indonesia | 1993-96 |
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| | INDUFOR | Liason Manager | “ | 2006-09 |
| | Freelance | Senior Forester | “ | 2009-present |
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| | “ | Programme Coordinator | Indonesia | 1993-94 |
| | Scandiaconsult. | Team Leader | Laos | 1995-02 |
| | Ramboll Natura | Chief Technical Adviser | “ | 2002-12 |
| | Own company | Consultant | “ | 2013-present |
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| Muraille, Bernice *(Belgian)* | Scandiaconsult | Joint Forestry Dev.Exp. | Laos | 1996-98 |
| Müllern, Carl-Fredrik | Swedforest | Water Res.Dev.Exp. | India | 1985-86 |
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| | " | FCP Coord. | " | 1994-96 |
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