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Cambodia Tree Seed Project



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An Analysis of Seed Supply Options for Cambodia

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Cambodia Tree Seed Project
Institutional Capacity Building of the Tree Seed Sector

Tree Seed Supply and Distribution

SUMMARY

Having identified and established a number of seed sources within the natural forest, the Cambodia Tree Seed Project is now in the process of examining options for the supply and distribution of seeds from these sources. To date, three options have been considered, and the findings are highlighted below.

1. Village Seed Source Management

Strengths

- well placed to manage seed sources close to villages
- interest in conserving economically/culturally important tree species
- income generation through seed sales provides benefits to the poor

Weaknesses

- lack of knowledge of marketing and potential seed demand
- extremely weak local organisational structures

2. Private Enterprise

Strengths

- communication between seed suppliers and users
- rapid and dynamic response to seed orders

Weaknesses

- lack of certified dealers, seeds and markets
- non-transparent seed quality

3. Nationalised Enterprise

Strengths

- formal authority over 40% of land cover
- technical expertise

Weaknesses

- potential slow response to seed orders and inability to store/transport recalcitrant seeds
- lack of financial resources to support centralised system

4. Conclusions

The findings indicate that the selection of one of the above options may not be the best solution for seed supply and distribution. The optimal system will draw on the strengths of each option whilst minimising its weaknesses. It is recommended that :

- where appropriate, communities will manage seed sources, collect and sell seeds,
- the private sector will link the seed suppliers to users through the market
- the Forestry Administration will provide a service and certification role, whilst developing relevant legal frameworks.

5. Requirements

To become operational, the requirements for such a system would include :

- clarification of access to seed sources on government land
- seed certification
- provision of credit/subsidies
- encouragement of seed users to purchase through this system
- acceptance and adoption of a government service role

Participation of Local Communities in Seed Source Management and Seed Collection

1. Background

The Forest Gene Conservation Strategy of Cambodia highlights the need for participatory approaches in forest gene conservation, and is fully supported by the recent Statement on Forest Policy, and Forest Law. However, delegation of responsibility for forest management to local communities is a new concept in Cambodia, and although it is currently being introduced, local level organisational structures are extremely weak. In some areas of the country, community structures have been developed for the implementation of development activities, with the support of external donors. However, nationwide, local levels of governance have only been in existence following the first commune council elections, held as recently as February 2002.

The Forestry Administration, through the Cambodia Tree Seed Project (CTSP) has identified and established a number of seed sources throughout the country, managed by local levels of the forest administration. However, in many areas local communities collect and sell seeds on an informal basis, but in general, the seed quality is poor.

The development of a community based seed source management system is currently being assessed, and if feasible, will be initiated in selected locations, linking to other existing or planned project initiatives as appropriate. This paper outlines the approach taken, experience gained, and constraints to community participation in seed source management and seed collection. It does not include the ongoing processes of decentralisation of seed source sub-management units within the DFW structure.

2. Approach

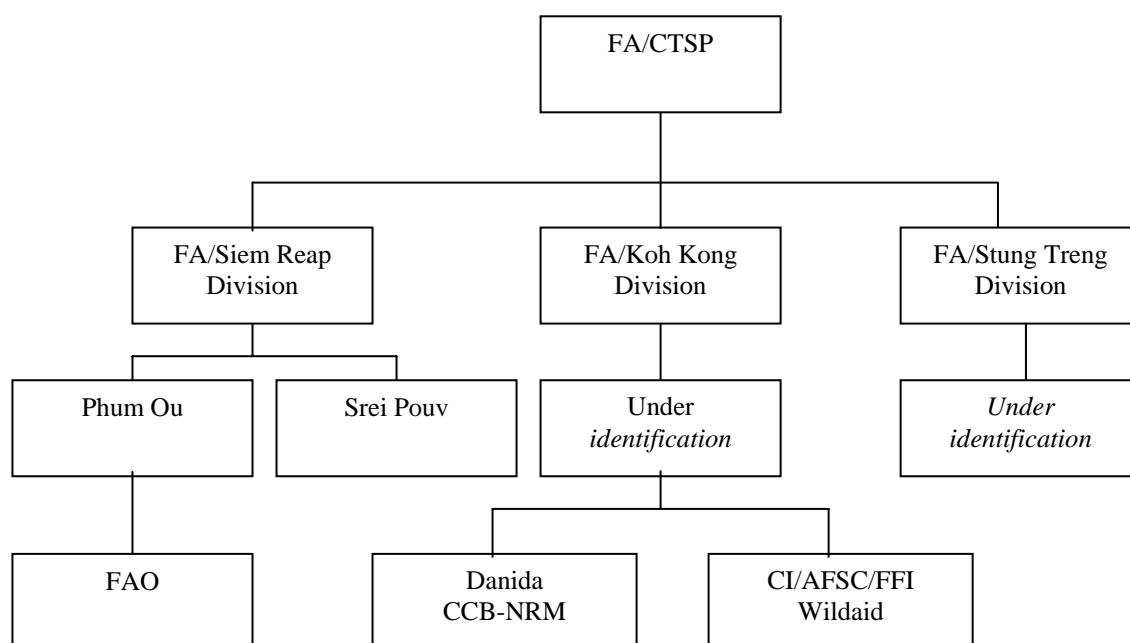
2.1 Seed Sources and Communities

The initial phase of the assessment includes seed sources and communities in different ecological zones. To date, a number of interviews, group discussions and observation visits have been conducted in Rattanakiri, Siem Reap and Koh Kong. Within Rattanakiri and Siem Reap, the seed sources have already been established and communities identified, but in Koh Kong and Stung Treng the process is in its early stages.

2.2 Structure, Roles and Responsibilities

It is envisaged that the structure of the system will have 3 major elements, where the appropriate level within the new Forestry Administration will provide linkages between the community and the central level. Wherever possible, seed source management will link with ongoing community development activities. The following responsibilities are suggested :

- the local community will be involved in the process of seed source establishment, management and protection, they will collect and sell seeds, and be supported by the local level of Forestry Administration.
- the roles of co-operating NGOs and bilateral projects will be determined on a case by case basis according to objectives, resources, etc.
- the local forestry office will liaise between the central and community levels, and will be responsible for monitoring the seed sources, distribution of extension materials and conducting phenology surveys of priority species.
- from the central level, DFW will provide technical assistance, training (communities and local foresters), and will identify clients.



3. Experiences and Recommendations

Villager participation in the management of seed sources was first tested in Rattanakiri province, where 2 seed sources have been established. Villagers close to the seed sources showed an interest in this work, and received training in seed collection, handling and storage. However, the provincial level of the forestry administration did not demonstrate sufficient commitment to support community participation. This experience highlighted the importance of strong relationships and clear roles and responsibilities within the proposed structure.

Generally, potential seed sources in the natural forest are far from communities. Villagers can collect seeds from these areas, but have difficulties in protecting them due to their remoteness, to disturbance by villagers from communities not involved in the management of the seed source, or to exploitation by more powerful businessmen. In contrast, land closer to communities is more usually heavily degraded and does not have mature trees. However, those areas established as community forests are well protected, and should be assessed for desired species that could be established as future sources for seed supply. This would require some revisions to the current seed source selection criteria, and to allow stands that are not yet mature to be registered as potential sources for the future.

Communities that are close to existing seed sources (in the natural forest) are willing to collect seeds provided that the benefit they would receive from the sales exceeds that of their other work. However, as seed collection is once a year, and the profit is relatively small, the villagers need either a high price for the seeds, or sources for many species. It is likely to be an attractive option for a few, but it will not be possible for all the villagers to benefit. Community participation in seed collection, therefore, requires a cost benefit analysis of each source in order to determine how costs and benefits can be shared within the community and between the community and Forestry Administration.

It is evident that to sustain community participation in the management of seed sources, the communities themselves must perceive clear benefits for their efforts. In order to overcome the issues related to seed source management in natural forest areas, it is suggested that, where appropriate, consideration be given to the establishment of community forests around existing seed sources. In this way, a buffer of protection wider than the seed source buffer zone is created, additional forest benefits are made available to the community, and scope is provided for the involvement of a greater proportion of the community in sustainable forest management. Seed collection and seed source protection would then be incorporated within a broader range of forest related activities, managed and implemented under the Community Forestry Committee. Possible partners have expressed an interest in adding seed collection activities to ongoing community development projects as an additional source of income for some families, thereby offering greater potential for sustainability. The recently adopted Sub Decree on Community Forestry provides a mechanism to ensure security of use for communities over forest areas, and a legal framework to strengthen their rights in conflicts with outsiders.

To date, experiences of community forestry have mainly been gained in degraded forest areas, generally supported and/or initiated by international and non-governmental organisations. There has been a great proliferation of requests for community forests over recent years, in response to community perceptions of resource degradation and loss, or possible conflicts over use rights. However, as noted above, community participation in forest management

has been legally recognised only since the adoption of the Forest Law in August 2002. Consequently, community forestry agreements have been formed at the relevant district or province level, and only one of the current community forests (of over 220) was established with the approval of the Forestry Administration.

More recently the concept of 'School Forests' has been raised in order to expand the area of the seed source to allow ongoing study and research activities by universities. This approach could also allow community participation, and is supported through CTSP assistance.

Whilst there is currently no market place for tree seeds, the marketing and distribution of seeds is crucial to the success of a village seed supply system. This requires development from the central level and/or private sector, in order to better attract local people towards this work, and is a key challenge for CTSP during 2004/5. In the past, seed collectors have been hired on a labour basis by local levels of forestry administration, but with little attention to seed quality. Careful consideration therefore, needs to be given to quality assessment and certification of seeds entering the markets. At the same time it is necessary to encourage seed users to access good quality seeds through this system. Experience to date illustrates that larger users receive budgetary approval for their plans too late to ensure a supply, especially for those species that seed in November or December. The success of the system will largely depend on timely planning by the users so that orders can be placed according the seeding times of the respective species.

Potential new seed sources inside the natural forest are few and far between, local forestry officials and local people know of some sources, but in Siem Reap either they did not fully meet the criteria set by CTSP, had already been lost, or were under threat. For the conservation of genetic resources, therefore, the identification of good seed sources is rapidly becoming a critical issue. Due to the difficulties experienced in seed source protection, further consideration should be given to *ex-situ* conservation. A network of community forests could offer an opportunity for a well protected system of representative *ex situ* stands, but the priority species list should be used flexibly in order to additionally promote the conservation of species that are important to local people.

**An Analysis of Strengths, Weaknesses, Opportunities and Threats of
Community Based Seed Source Management**

Strengths	Weaknesses
<ul style="list-style-type: none"> • supported by the Forest Gene Conservation Strategy, Statement on Forest Policy and Forest Law • villagers' interest in seed collection and sale proven through former labouring contracts, and informal seed sales • communities well placed to manage seed sources close to their villages • income generation through seed sales • villager interest in conserving species important to them • selected villagers trained in seed collection and storage • benefits to the poor. 	<ul style="list-style-type: none"> • extremely weak local organisational structures (within village and local governance) • potential seed sources in the natural forest are far from communities • potential income for villagers is extremely limited • lack of knowledge of marketing, and potential seed demand • lack of quality controls on seeds collected and distributed • insufficient project time span to assess and test the potential for this system
Opportunities	Threats
<ul style="list-style-type: none"> • expected increase in demand for seeds due to government priorities for reforestation • possible linkages to ongoing/planned projects, especially DANIDA/CCB-NREM • integration of seed source management and seed collection into ongoing community development activities • potential future seed sources within community forests • identification of seed sources within the compartment level planning of forest concession management 	<ul style="list-style-type: none"> • level of responsibility/land use rights allocated to communities within the decentralisation/land use planning process • insufficient commitment from local stakeholders • lack of demand for quality seed • unclear benefit sharing • unequal benefit distribution within the community leading to conflict • lack of willingness to pay for quality seed originating within the jurisdiction of the user • lack of village level interest in protecting seed sources without incentive • loss of seed source • poor seed procurement planning

Private Sector Opportunities within the Seed Distribution System

1. Background

As a pre-requisite for successful reforestation programmes, the Royal Government of Cambodia and the Cambodia Tree Seed Project aim to encourage the supply and use of good quality seeds. Useful and economically important tree species will be conserved through increasing their use in tree plantings. To date, a number of seed sources have been identified throughout the country, to be managed by local levels of forestry administration.

More recently, some investigation has been conducted into the feasibility of local communities managing seed sources. However, crucial to its success is not only awareness raising, but marketing and distribution, a system that requires development and commitment from the central level or the private sector. The Forestry Administration obtains seeds by hiring local people to collect them, although it is possible that seed quality could be increased through appropriate methods of quality control.

The private business sector is young in Cambodia, but documents describing the movements of goods, including forest products, highlight the importance of the informal sector, which in many instances is highly complex. Consideration is now being given, within CTSP, to ways in which to assist the involvement of the private sector on a more formal basis in the marketing of tree seeds. Currently, two approaches (or a combination) are under discussion, as outlined below.

2. Approach

2.1 Active Trader

Studies of private informal sector activities illustrate linkages between suppliers and users, whenever there is a market demand for products, through a diverse array of traders. Whilst informal trading does not necessarily guarantee a high quality product, it generally establishes firm links between suppliers and consumers. In the case of tree seed distribution, users and suppliers are currently few, the market place is not developed, but knowledge of good seed sources exists. Given the range of seed source distribution, and the small amount of people likely to be involved, there needs to be a co-ordinator, who can compile orders for different communities, and organise transport of seeds between suppliers and users.

There is an opportunity, therefore, for a trader to link seed suppliers and users, develop a market, and guarantee (aided by a certification body) high quality seeds. However, profitability in the short term remains highly questionable. Good business reputation needs to be developed to assure quality, yet currently there are no certified dealers or seeds. In addition, seed quality is not a transparent product, needing time to become visible, and purchases therefore require a level of trust, which is not a common feature of the business society in Cambodia.

2.2 Website/Catalogue Manager

In this scenario, the trader would provide a communication channel between the suppliers and users through the establishment and maintenance of a website and catalogues, in order to match orders to suppliers.

However, seed quality may be better guaranteed through the registration of only those communities involved in the management of seed sources.

3. CTSP Support

CTSP support would be necessary, especially in the early stages of the establishment of private seed enterprises in:

- clarification of legal matters,
- seed certification,
- credit/subsidies
- clarification of access to seed sources on government land
- facilitation (including linkages to CCB-NREM)
- encouraging seed users to purchase through this system rather than the present informal one.

**An Analysis of Strengths, Weaknesses, Opportunities and Threats of
Private Seed Enterprise**

Strengths	Weaknesses
<ul style="list-style-type: none"> • private sector is involved in seed marketing • CTSP support to the establishment of a formal seed market • efficient and opportune private engagement • income generation for communities collecting seeds or managing seed sources. 	<ul style="list-style-type: none"> • lack of certified dealers and seeds • non-transparent seed quality and long time needed for evidence • lack of clarity on legal matters • lack of market • insufficient project time span to assess and test the potential for this system.
Opportunities	Threats
<ul style="list-style-type: none"> • expected increase in demand for good quality seeds due to government priorities for reforestation • possible linkages to private sector support projects, especially DANIDA/CCB-NREM • certified seed sources guarantee high quality seed 	<ul style="list-style-type: none"> • lack of demand for quality seed • lack of willingness to pay for quality seed originating within the jurisdiction of the user • no/low profit over the short term • lack of access to seed sources on government land • lack of trust within the business community • seed users continue to support the cheaper, informal market

Nationalised Seed Supply through the Forestry Administration

1. Background

The Forestry Administration, through the Cambodia Tree Seed Project, has identified and established a number of seed sources throughout the country, managed by local levels of forestry administration, but monitored and supervised from the central level. Given the range of distribution of seed sources, there needs to be an organised system of marketing and distribution to effectively link the seed suppliers to the users, and one option would be to establish a nationalised seed supply system.

However, experiences of centralised seed supply systems in other countries have not proven to be viable. They are expensive, requiring considerable inputs from the government, and produce seed of low quality due to poor controls and lack of responsibility. Within Cambodia, key government institutions (for example, finance, tax and police) have yet to attain efficient and effective methods of conducting their prime functions, and the general perception of the role of government institutions is not one of service provision for civil society.

The current physical conditions within Cambodia further hamper the development of centralised seed distribution systems. Infrastructure is poor, and as seeds of most indigenous species are recalcitrant, transport to central or regional stores for redistribution to rural areas is neither economical nor wise. As human resources are limited, information and knowledge are tools of power and for sale, not to be shared freely.

A decentralised system of distribution would better serve seed users due to concerns associated with the movement of seeds from their origins to their planting sites. Currently, the Forestry Administration is embarking on a process of decentralisation, although the level of responsibility to be devolved to local levels remains unclear, and the issues identified in centralised systems are likely to roll down to decentralised levels.

In view of the lessons learnt from elsewhere, and the current situation in Cambodia, it is not considered advisable to promote a centralised/regionalised system of seed distribution.

2. Role of Forestry Administration within a Seed Supply System

As the manager of natural forests, the Forestry Administration has responsibility for forest gene conservation and tree planting. At the local level, it manages most of the established seed sources, acts as a link between seed production areas and the central level, and recognises some role for community participation, especially in seed collection. At the central level, it plans tree planting activities and budgets, and co-ordinates seed collection and distribution, although it is slow and cumbersome, and on an ad hoc basis.

In the future, the new local level of Forestry Administration could continue its liaison role, take over responsibility for monitoring the seed sources, distribute extension materials, and conduct phenology surveys of priority species. The central level could provide technical assistance, training, and identify users.

It is recommended that seed distribution be placed within the private/community sector, which is better able to provide a more rapid and dynamic response to orders.

3. Requirements

- substantial financial resources to support extension and facilitation roles
- improved communications between stakeholders involved in seed source management, collection and distribution
- clarification of access to seed sources on government land
- acceptance and adoption of a service role for all seed users.

**An Analysis of Strengths, Weaknesses, Opportunities and Threats of
Nationalised Seed Supply**

Strengths	Weaknesses
<ul style="list-style-type: none"> • Forestry Administration has the formal management authority over 40% of land cover • Forestry Administration manages seed sources within natural forests, and is responsible for forest gene conservation and tree planting • dominant tree seed distribution system • technical expertise. 	<ul style="list-style-type: none"> • lack of financial resources to support centralised system • potential slow response to seed orders • poor infrastructure • lack of information sharing • lack of transparency • forestry structure unable to accommodate transport of recalcitrant seeds.
Opportunities	Threats
<ul style="list-style-type: none"> • expected increase in demand for seeds due to government priorities for reforestation • decentralisation of Forestry Administration • adoption of a government service role. 	<ul style="list-style-type: none"> • lack of perception of government role as a free service provider • lack of demand for quality seed • loss of seed sources • risk of trading poor quality seeds.