

## PART 2

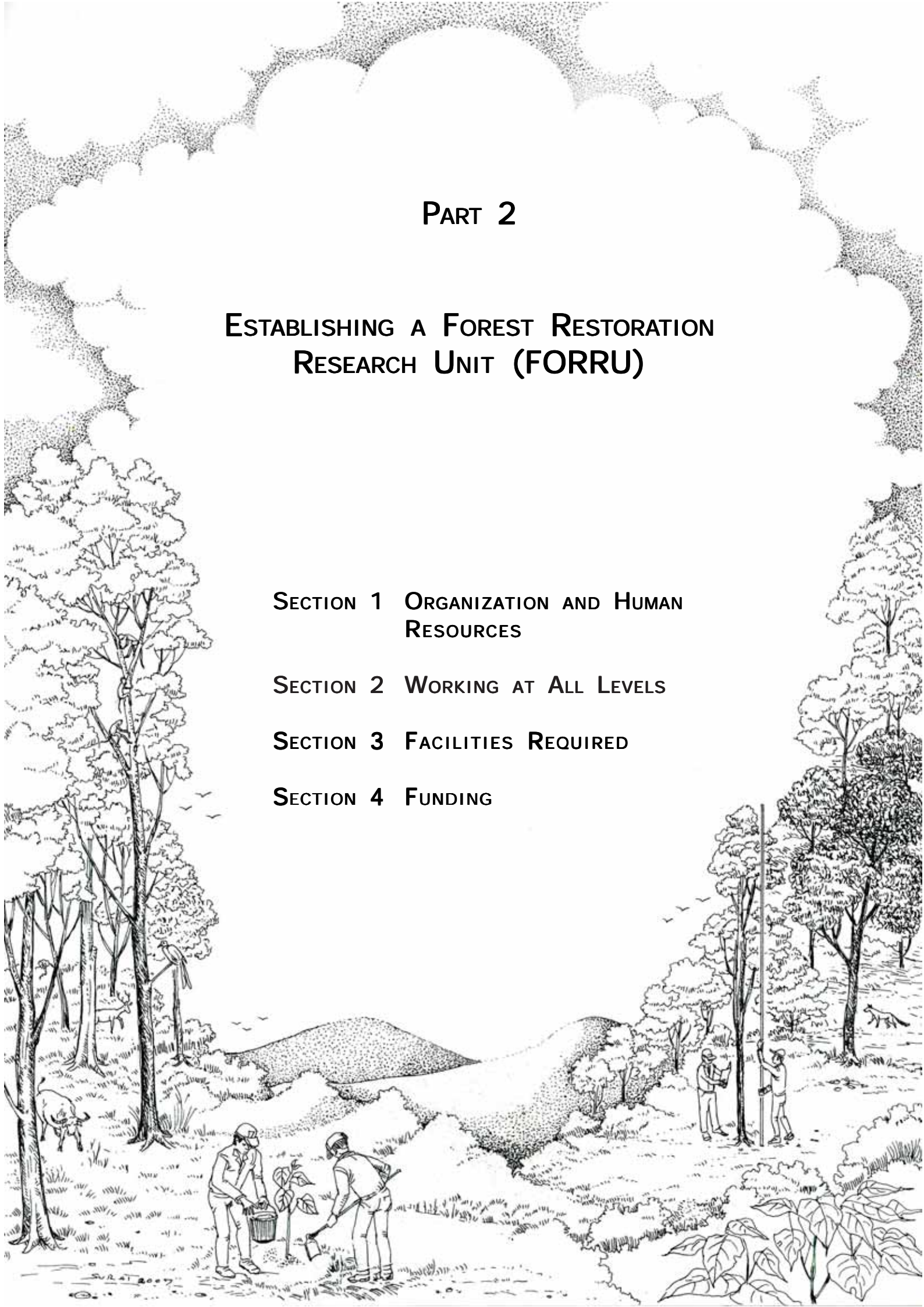
# ESTABLISHING A FOREST RESTORATION RESEARCH UNIT (FORRU)

**SECTION 1 ORGANIZATION AND HUMAN  
RESOURCES**

**SECTION 2 WORKING AT ALL LEVELS**

**SECTION 3 FACILITIES REQUIRED**

**SECTION 4 FUNDING**



ESTABLISHING A FORRU  
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Right: FORRU-CMU's first re-  
search nursery opened in 1994,  
sponsored by Riche Monde  
Bangkok Ltd. To date, more  
than 400 indigenous forest tree  
species have been grown  
there. The nursery is situated  
in natural forest at 1,000 m  
elevation in Doi Suthep-Pui  
National Park, N. Thailand.



Below: The roofed area  
(background) has benches  
for germination experiments.  
It is also where seedlings are  
potted and where educational  
activities are run. The office  
(left) houses a computer and  
data storage facilities. In the  
foreground, the standing-  
down area has poles to  
support removable shade  
netting (Section 3).



Below: Hosting university interns  
creates valuable academic net-  
working opportunities. They can  
help with the work and may  
become the future staff of the  
unit (Section 1).



Left: An herbarium is vital to ensure  
all tree species are correctly  
identified. Below: FORRU-CMU  
worked closely with local  
villagers to plan the unit's first  
experimental plots in 1996  
(Section 2).



# ESTABLISHING A FOREST RESTORATION RESEARCH UNIT (FORRU)

FORRU-CMU began by simply co-coordinating a few students, interested in doing their thesis research projects on forestry-related topics, and setting up an *ad hoc* nursery in an unused corner of a university campus. As interest in the work grew, we constructed custom-built facilities, in collaboration with Doi Suthep-Pui National Park, with international funding and employed a full time staff.

FORRU's could equally well be established in other institutions and in other ways; but regardless of where or how a FORRU is established, human resources are always the most important component. Training and maintaining high levels of motivation and commitment among everyone involved in the unit are vital for the unit's success.

## SECTION 1 – ORGANIZATION AND HUMAN RESOURCES

### Who should organize a FORRU?

Backing from a well-respected institution is essential for the success of a FORRU. Without it, it is difficult to attract funding and ensure local participation in forest restoration programs. A FORRU is best organized by a recognized institution, with its own established administrative procedures. This could be a university faculty or department, a government-run research centre or a well-established NGO.

Such institutional support is essential to establish and maintain good relations between the diverse organizations involved (stakeholders), such as community groups, government departments, NGOs, funding agencies, international organizations, technical advisers and educational establishments. Clear and mutually acceptable arrangements, governing the management of the project, laid down by the institution, can ensure smooth running, and will help to prevent disputes among stakeholders.

### What staff are needed?

An inspirational leader is required to run a FORRU; a committed conservationist with experience of tropical forestry. In addition to a rigorous scientific background, he or she should be skilled at project administration, personnel management and public relations. If a FORRU is hosted by a university, the unit leader could be a senior scientist from the faculty staff. In a government forestry research centre, a senior forestry officer could take on this role.

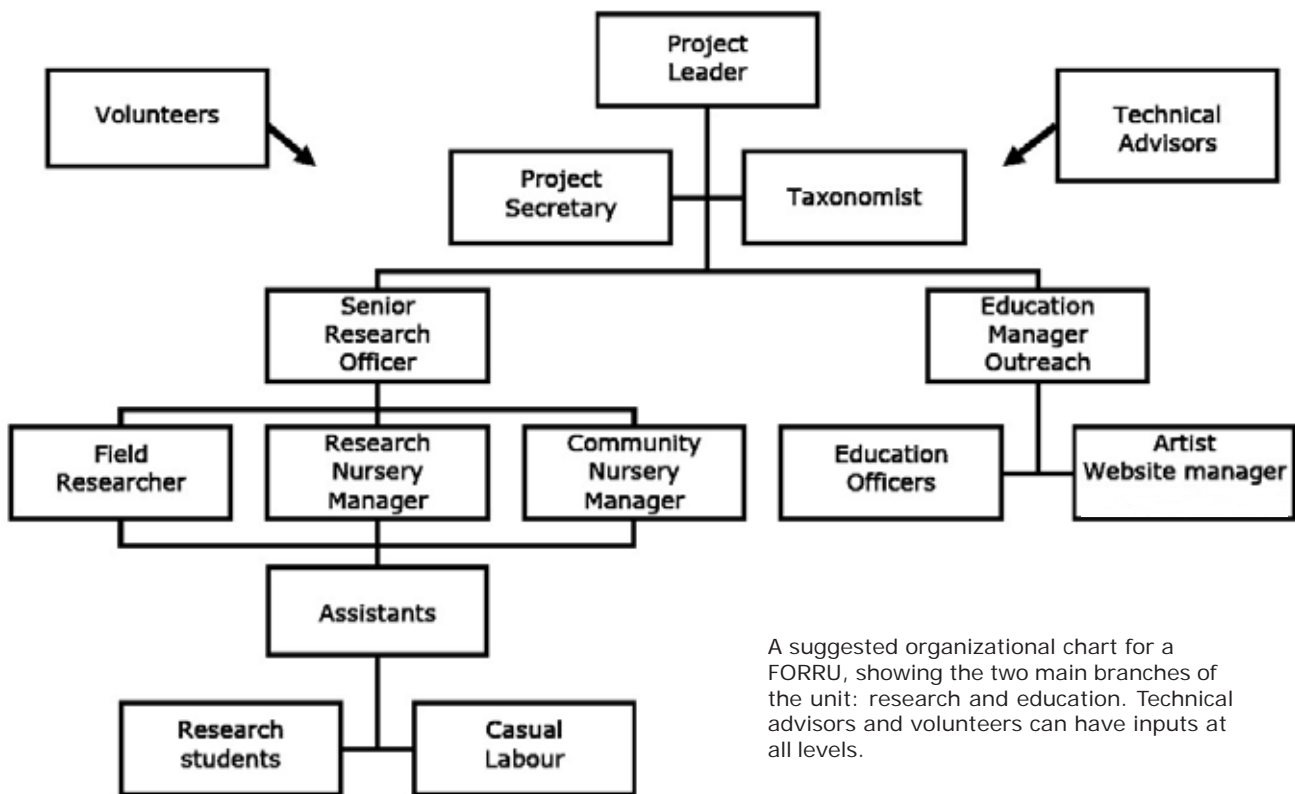
Secretarial support is also essential. Initially a pool secretary may suffice, but as the unit grows, full-time secretarial support will become necessary. When starting a FORRU, accurate identification of tree species is essential. Therefore, involvement of a professional plant taxonomist, with access to herbarium facilities, is crucial. This is usually done on a consultancy basis.



Two other essential permanent posts include a nursery manager and field manager. The former is responsible for the day to day running of the nursery and its staff, and for ensuring sufficient production of good quality trees for field trials. Once field trials have been established, a field manager is required to manage protection, maintenance and monitoring of the planted trees, as well as the processing of monitoring data. The nursery and field manager positions may be part-time to begin with but, as the nursery and field trial system grow, full-time staff will be needed, as well as assistants to deal with the growing workload.

If possible, assistants should be recruited from amongst the local community. This will ensure efficient information exchange between local people and the FORRU staff. The unit will be more acceptable to local people if some of them are directly employed in its day to day operations. Minimal educational qualifications are required for the assistant positions, since training can be provided by the field and nursery managers.

As the project proceeds, education and outreach will become increasingly important, to disseminate the results of the research directly to those responsible for implementing forest restoration. Educational materials must be produced, workshops and seminars organized and someone must be available to deal with the inevitable stream of interested visitors to the unit. To begin with, the research team may be able to handle some education work, but eventually an education manager, responsible for designing and implementing a comprehensive education and outreach program, should be recruited; otherwise research outputs from the unit will decline as the research staff are distracted from their main work.



A suggested organizational chart for a FORRU, showing the two main branches of the unit: research and education. Technical advisors and volunteers can have inputs at all levels.

### Who else should be involved?

In addition to routine research on tree propagation and planting, carried out by the full-time staff, FORRU's provide excellent opportunities for detailed research on more specific questions e.g. influence of mycorrhizae on tree growth; how to control pests in the nursery; which trees attract most birds or foster establishment of most tree seedling species and so on. These are ideal topics for student thesis research projects. It is important that the FORRU is freely open for use by students and researchers from other institutes. In this way, it will quickly generate an impressive list of publications, which can be used to encourage further funding and institutional support.

Part-time (or casual) labour will be needed when the unit is busy, such as preparing for planting events and maintaining planted trees. Casual labour should be recruited from local communities, to contribute to the local economy and build support for the unit. Including local people in monitoring planted trees is also important; so that they share in the projects success.

### What training will be required?

Initially, it is unlikely a newly recruited FORRU staff will have all the skills required to undertake the full range of required tasks. Training in at least some of the following topics will be needed:-

- Project management and administration, proposal writing, reporting and accounting;
- Experimental design and statistics;
- Tropical forest ecology;
- Plant taxonomy;
- Seed handling;
- Nursery management and tree propagation techniques;
- Managing field trials and silviculture;
- Biodiversity survey techniques
- Environmental educational skills;
- The skills necessary to work with local communities.

Initially, project leaders must provide adequate training for all newly recruited FORRU staff. However, as the level of skills among the staff rises, nursery/field managers can begin to train assistants and casual labour. We hope that this manual and its companion volume, 'How to Plant a Forest' provide adequate texts for "in house" training programs, but several other texts may also be useful. We recommend Jaenicke (1999) (<http://www.cgiar.org/icraf>), as well as the 6-volume series: "Tropical Trees: propagation and planting manuals" published by the Commonwealth Science Council, London. Keep manuals in the nursery office as a constant source of reference. In addition, key chapters on practical techniques should be copied and distributed amongst the staff.

Outside organizations can also provide important advice or run training courses for FORRU staff. An advantage of involving overseas advisors is the opportunity to forge collaborative links, which can result in joint projects supported by international funding agencies. Opportunities may also arise for FORRU staff to attend training courses at other institutions, both locally and abroad.



## SECTION 2 – WORKING AT ALL LEVELS

Establishing a FORRU requires working with people from all levels of society from high ranking government officials to local villagers.

### How can a FORRU contribute to national forest policy?

To satisfy funding agencies, as well as the administrators of FORRU host institutions, it is necessary to justify establishment of a FORRU in terms of its contributions to: -

- Implementing national policies on forestry or biodiversity conservation;
- Meeting the obligations of governments under international agreements.

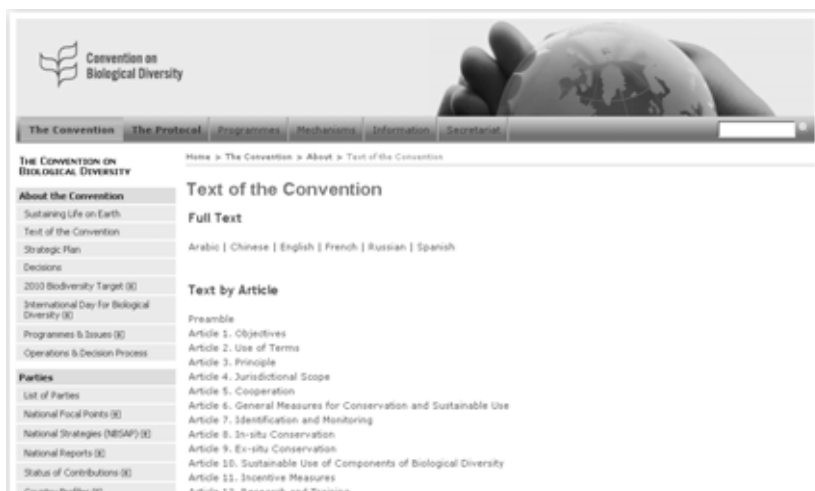
Four documents may help you to justify the establishment of a FORRU at the national level: -

- The Convention on Biological Diversity (CBD);
- The national biodiversity strategy of your country;
- “ITTO – Guidelines for the Restoration, Management and Rehabilitation of Degraded Secondary Tropical Forests”;
- The national forest policy statement of your country.

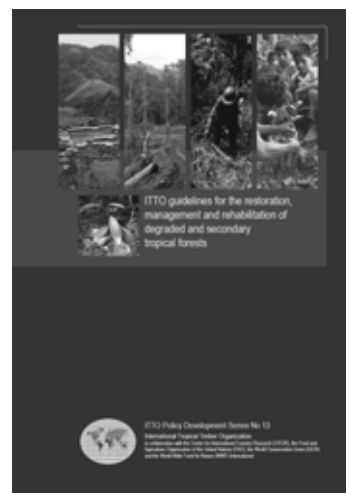
If your government is a Party to the Convention on Biological Diversity, it is obliged to implement policies and programs to meet the provisions of the convention, such as :-

- Article 8 (f) – “Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species...”
- Article 10 (d) – “Support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced...”
- Article 12 (b) - “Promote and encourage research which contributes to the conservation and sustainable use of biological diversity...”

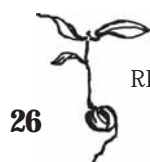
International conventions and agreements can be used to justify funding for a FORRU. These days, everything you need is on the web....



<http://www.biodiv.org/convention/articles.asp>



<http://www.itto.or.jp/live/PageDisplayHandler?pageId=201>



Furthermore, under the terms of the convention, each member country must prepare a national biodiversity strategy. Such documents usually include provisions for the restoration of forest ecosystems for biodiversity conservation, which can be used to justify the establishment of a FORRU. The full text of the CBD may be downloaded from <http://www.biodiv.org/convention/articles.asp>

If your country is a member of the International Tropical Timber Organization, you should consult "ITTO – Guidelines for the Restoration, Management and Rehabilitation of Degraded Secondary Tropical Forests". Although this document does not have the legal weight of an international convention, it does represent an international consensus of opinion, which national organizations respect. It includes 158 recommended actions, many of which could be supported by information generated from a FORRU. Download the guidelines from <http://www.itto.or.jp/live/PageDisplayHandler?pageId=201> or write to the INTERNATIONAL TROPICAL TIMBER ORGANIZATION, International Organizations Center, 5th Floor, Pacifico-Yokohama, 1-1-1, Minato-Mirai, Nishi-ku, Yokohama, 220-0012, Japan

Most countries have published national forest policies, which stipulate forestry programs and projects over periods of 5-10 years. Many of these policy statements include recommendations about the rehabilitation of degraded areas, which can be quoted to justify the establishment of a FORRU.

### **Working with protected-area staff**

Since forest restoration is most appropriate for biodiversity conservation, FORRU research nurseries and field trials are best established in protected areas, such as wildlife sanctuaries and national parks, where biodiversity conservation is the top management priority, although other sites may also be used. Once national and local government officials have been persuaded of the value of a FORRU, support from the chiefs and staff of protected areas should be easier to obtain. A close working relationship must be developed with the staff of a protected area to gain permission to work in such areas and to engage area managers and staff in establishing and running FORRU facilities.

Permission will be needed to use sites for nursery construction and field trials, without conflicting with the management plan for the area. In addition to land-use issues, the headquarters of a protected area may be able to provide staff or casual labour to assist with the activities of the unit. When drafting funding applications, consider including the salary of one or more of the protected area staff to be seconded to the FORRU. If field trials contribute to increased forest cover within a protected area, then the protected-area staff will probably want to be involved in tree planting events and maintenance of the planted trees. Protected-area headquarters often have vehicles, which may be available for transporting trees, nursery supplies and planting materials around the area. Sometimes a protected area may charge the full cost of providing such help to the FORRU budget, but some protected areas may choose to absorb the costs into their central budget. In such cases, it is appropriate to include in funding applications an overhead, payable to the protected area headquarters, to contribute towards the costs of such *ad hoc* logistical support.



Support from protected areas staff can be maintained by inviting them to attend joint workshops and training programs at the FORRU nursery and field plots. Make sure that the chief and headquarters staff are also invited to seminars and conferences, at which results from the FORRU are presented and that the protected area is acknowledged in all published outputs of the research unit. Finally, provide the chief of the protected area with regular progress reports, even if they are not requested. This may help to ensure continuity when staff changes occur at the protected area headquarters.

**Why is working with communities so important?**

Very few protected areas have no human populations; so developing close working relationships with local communities is essential to prevent misunderstandings about the aims of the work, and diffuse any potential conflicts over the positioning of forest restoration plots. A good relationship with local people provides a FORRU with 3 important resources:

- Indigenous knowledge;
- A source of labour;
- An opportunity to test the practicability of research results.

Indigenous knowledge helps with the selection of candidate framework species. Villagers are aware of which tree species colonize abandoned cultivated areas and they often know which tree species attract wildlife and where suitable seed trees are located.

Establishment of field plots, maintenance and monitoring of planted trees, as well as fire prevention are labour intensive activities. Local people should be the first ones to be offered such work and to benefit from payments for it. This helps to build a sense of local "stewardship" of forest restoration plots, which increases support for the work at the community level. Thus, planted trees are more likely to be protected than destroyed.

It is no good developing methods that can only be used by qualified researchers, so the practicability and acceptance of all techniques and species choices, developed by a FORRU, must be tested by those that will use them. Establishing a community tree nursery, where local people can test the techniques developed by research, is therefore highly advantageous and provides another

opportunity for local people to gain income from the project. In addition, community nurseries can produce trees close to planting sites, which reduces the transportation costs of tree planting.

Developing a close working relationship with people living within a protected area is not always easy, especially if they feel disenfranchised by establishment of the protected area. However, local communities are often the first to benefit from restoration of their local environment, particularly from re-establishment of supplies of forest products and improvement of water supplies. A FORRU can encourage local people and protected area staff to work together to establish field plots and nurseries, which can help to build closer ties between them. This benefits both local people and protected area management.

Working well with local people is usually essential for the success of field trials.





Stressing such benefits can help to persuade local people to participate in the activities of a FORRU.

Hold frequent meetings with the village committee to ensure that the local community is involved in all stages of a FORRU program, but particularly in the positioning of field experiments, so as not to conflict with existing land uses. Appoint someone from the local community to be the main contact person to relay information between FORRU staff and the villagers. In funding applications, make provisions for the employment of local people, both to run a community tree nursery and as casual labour for planting, maintenance and monitoring of plots, as well as fire prevention and suppression. Invite local people to meet visitors to the project, so that they are aware of growing interest in their work and involve them in media coverage of the project, so that they benefit from a positive public image.

### **Working with foreign institutes and advisors**

Expertise and advice from foreign institutes can greatly accelerate the establishment of a FORRU and prevent replicating work that has already been done elsewhere. FORRUs can benefit greatly from the experiences of foreign advisors who have worked on forest restoration projects in other countries and can avoid repeating their mistakes. Other specialists may be engaged to provide expertise in particular disciplines, such as plant taxonomy or nursery production techniques.

It is unlikely that a FORRU will have the funds necessary to pay international consultancy fees to foreign experts. Consequently, it is important to build collaborative partnerships with foreign institutions so that the costs of involvement of foreign advisors may be covered by their own institutions, by international funding agencies, or from collaborative project grants.

A further benefit of involving foreign institutes and their staff is that they have access to national sources of funding that are not directly available to foreign projects, except through partnership projects with institutes in the donor country. It is important to work with foreign advisors who understand the ethos of the FORRU, and do not try to change the direction of the work to suit preconceived ideas not in accord with the ecological, or socio-economic conditions in which the FORRU is operating.



In 2000, the villagers of Ban Mae Sa Mai won a national award for caring for experimental plots established by FORRU-CMU. This kind of recognition helps to foster a spirit of community stewardship of planted forests, even within protected areas.



## SECTION 3 – FACILITIES REQUIRED

### Phenology trail

Access to undisturbed forest is essential for a FORRU research program. This should be as close as possible to the proposed sites of the FORRU's planting trials. Such forest represents the "target" for forest restoration, so the first task is to record and identify the indigenous tree species that comprise the forest and collect basic ecological data about them.

Labeled trees along existing trails through the forest are usually sufficient to establish studies of the seasonality of flowering and fruiting (phenology) and observe potential mechanisms of pollination and seed dispersal, as well as the relative attractiveness of each tree species to wildlife. Phenology trails with labeled trees are also a valuable educational resource.

### Herbarium

An herbarium is a repository for collections of dried, preserved and *well-labeled* specimens of plants and fungi.

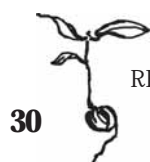
Reference specimens of all tree species worked on by the FORRU (both flowering and fruiting material, as well as seedlings at various stages of development) should be stored in an herbarium. It is convenient to house a small herbarium in a FORRU's nursery or offices, but the proper conditions (i.e. completely dry and pest-free), necessary to prevent deterioration of specimens, can be difficult to maintain, especially under field conditions. Therefore, duplicate specimens should also be lodged with an official herbarium maintained by a recognised botanical institute. The unit's herbarium should have a dissecting microscope, plant presses, specimen dryers, preservatives and plant identification books. For detailed information on setting up a small project herbarium see 'The Herbarium Handbook' published by the Royal Botanic Gardens, Kew, U.K. ([www.kewbooks.com](http://www.kewbooks.com)).

Accurate labeling of trees along a phenology trail can turn an essential research tool into a valuable educational resource.



### Nursery and office facilities

The research nursery is a FORRU's core facility. In addition to hosting research on tree propagation, the nursery must have the capacity to produce enough trees to supply the unit's field trials.



The ideal location for a FORRU research nursery is on the boundary of the target forest (seed collection source) and as close as possible to the site allocated for planting trials. If the planting trials are to be located far away from the target forest, it is better to build the nursery near the target forest, since phenology monitoring and seed collection are carried out more frequently than transporting trees to the planting site. In addition, target forest provides a source of wind-dispersed spores of mycorrhizal fungi, which are important for growth of indigenous forest tree species in nurseries. Select a site which will allow for future expansion, since demand for seedlings will inevitably increase with time.

As the project progresses, it will also be necessary to establish additional community tree nurseries to:

- Test propagation techniques developed in the research nursery by local stakeholders;
- Expand tree production capacity;
- Reduce transportation costs and minimize damage to trees during transportation;
- Demonstrate how trees can be propagated in relatively low tech facilities, which can be cheaply and simply constructed.

Community tree nurseries also provide opportunities for direct involvement of local people in forest restoration projects, as well as excellent social and educational facilities, particularly for the participation of local school children and village environmental groups.

Satellite nurseries may be necessary for research on different forest types. For example, FORRU-CMU's first research nursery is located in evergreen forest at 1,000 m elevation, which is unsuitable for working on trees of lowland, deciduous forest. Consequently, a lowland nursery was established to study propagation of deciduous forest tree species.

### **How should a research nursery be designed?**

Basic facilities required for a FORRU research nursery include:

- Road or track to the nursery to provide vehicular access;
- Shaded work area for seed preparation, sowing, pricking out etc;
- Shaded area with benches for seed germination trials, protected from animal seed predators by wire mesh;
- Fenced off standing-down area (to protect against stray animals) with removable shade where potted seedlings can be grown on and hardened off ready for planting;
- Reliable water supply;
- Irrigation system (optional);
- Shelter and toilet for staff and visitors;
- Lockable store for materials and tools;
- Drying box for the preparation of herbarium specimens;
- Office for data storage and management;
- Area set aside for education and outreach activities.



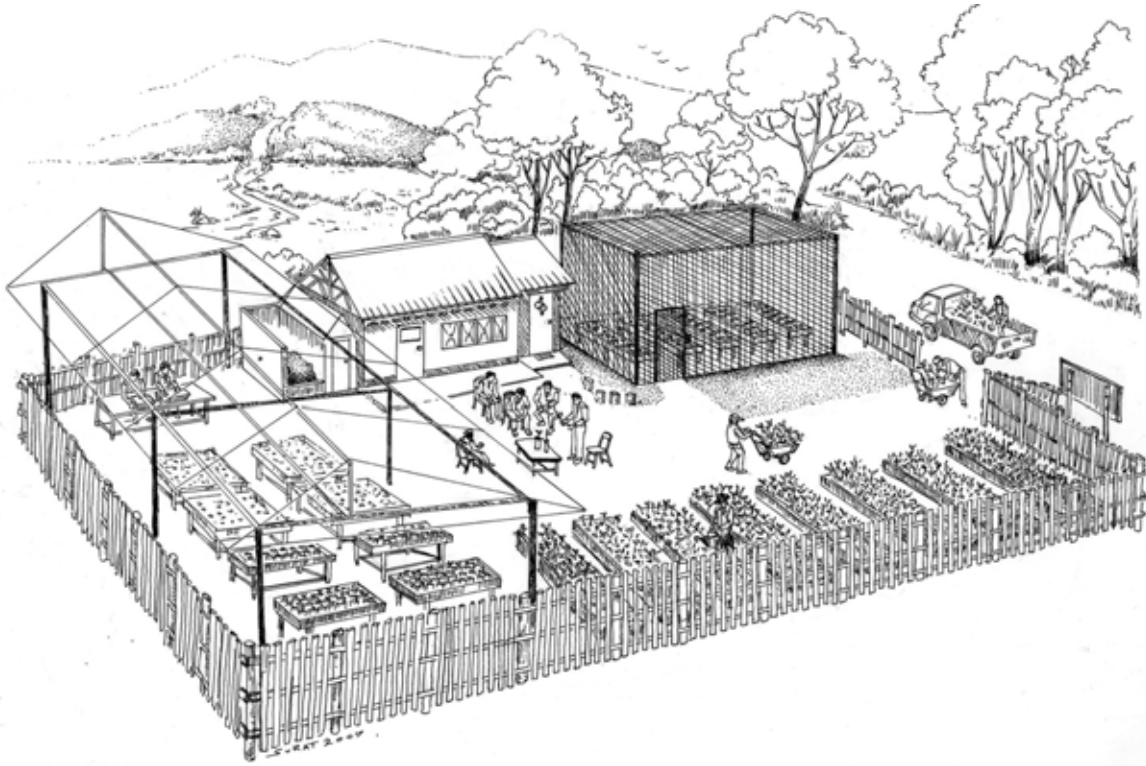
The office should be well furnished and equipped with filing cabinets, a large desk and a computer work station. As the project grows, it may outgrow a nursery-based office, so provision must be made for project offices elsewhere in the host institution.

Some space in the nursery should be kept clear to accommodate educational activities, including practical demonstrations of nursery practices such as potting and pricking out. This area could be equipped with a white board, instructional posters and fold-away seats for visitors. Consider the maximum group size that could be accommodated without overcrowding the nursery.

The size of the standing down area will depend on the design and replication required by seed germination trials and seedling growth experiments, as well as the numbers of seedlings required for field trials.

As a rule of thumb, the area required for a typical tree nursery can be estimated by adding together the areas required for propagation, standing down and hardening off; multiplied by a contingency factor of 1.2; plus a similar area for paths, a potting area, storage etc. Additional space should be allocated for the teaching area and the office.

## THE RESEARCH TREE NURSERY



This typical research tree nursery is close to natural forest, easily accessible and has a permanent water supply. The roofed area is for germination experiments and pricking out. An additional caged area protects some germination experiments from seed predators. The office, store (for equipment and media) and toilet are well-constructed and centrally placed, with an area kept clear in front for training activities. The standing down area is shown here with shade netting removed to harden off the saplings before planting. The fence keeps out stray animals. A sign at the entrance informs local people of the nursery's function.



A well thought out layout can greatly increase tree production efficiency. Think about the various activities to be carried out and the movement of plants and materials around the nursery. For example, position container beds near to the main entrance, or wherever trees will eventually be loaded on to vehicles for transportation to the planting site. Allow extra space in the potting area for a temporary standing down area during potting, or a teaching area during workshops. Ensure that this area is protected from direct sunlight by shade netting, both for the plants and people.

Finally, irrespective of how accurate calculations of space might be, if the unit is successful, more space will be required in the future. So, select a site that can accommodate future expansion of the nursery.

### **Field Trial Plot System (FTPS)**

Field plots for trialing framework tree species, and demonstrating the framework species method (see Part 4, Section 2) should be established on land that is suitable for planting trees, within a degraded area, which originally supported the "target" forest type. Use of the land for trial plots must be agreed by all stakeholders, and it should be readily accessible by vehicles.

The plots should be no further than 10 km from a remnant of the target forest ecosystem, to provide a seed source within dispersal range of frugivorous animals and to provide a refuge for them. Biodiversity recovery may be slow or restricted in plots further away from remnant forest.

In addition, try to position plots where forest restoration will yield maximum benefits for ecological integrity, biodiversity conservation and environmental protection at the landscape level. Such sites include wildlife corridors to reverse forest fragmentation; sites around springs and along stream sides; and sites at risk of soil erosion and landslides. If this can be achieved, then the field plots will have the maximum impact as demonstrations of forest restoration methods, showing not just the establishment of the trees themselves, but also how former levels of ecosystem structure and function can be restored.

### **Information management**

The final selection of framework tree species and the design of forest restoration experiments depend on the efficient storage, integration and analysis of all the diverse sources of information that are generated from a FORRU (taxonomy, phenology, nursery and field experiments, as well as indigenous knowledge).

Original data sheets on each tree species investigated can be stored in conventional filing cabinets in the nursery office (with back-up Xerox copies stored in the host institution); but eventually, a computerized database will be needed. Design of this database, including both the hardware and the software required for it, should be seriously considered at the outset of the project, in consultation with an IT professional; since changing the data management system half way through a project can generate a lot of unnecessary work and expense. Some tips on database design and management are provided in Part 6.



### Education Unit

A successful FORRU generates a large amount of original knowledge, which must be disseminated to a wide range of different stakeholders, including government officials, community groups and NGOs. Demand for educational events can overwhelm research staff, so it is important to establish a specialist team, dedicated to implementing education and outreach programs. Different styles of educational activities and materials must be designed to meet the needs of each different target group. The education team should also develop and implement an effective communications strategy for general dissemination of project outputs, to handle public relations and for dealing with news media and publicity. Tips on designing and managing an education program and communications strategy are provided in Part 6, Sections 3 and 4.

### Publications

Scientists traditionally disseminate research results by publishing peer-reviewed papers in scientific journals. Although these papers are important, they often fail to reach those actually involved in implementing forest restoration. Therefore, FORRU staff must also produce and distribute innovative written materials, as well as user-friendly educational resources (such as audio visual presentations, handouts, websites etc.) that are easily accessible by government officials, villagers and school children, as well as trainees and researchers. This is discussed in Part 6, Section 3.



Forest restoration is a transgenerational activity. Older people have experienced deforestation and its consequences and can provide a wealth of indigenous wisdom to complement research results. Children have most to gain from forest restoration and are receptive to new ideas. FORRU education programs and materials must be designed to engage all generations.



## SECTION 4 – FUNDING

### How can funding be obtained?

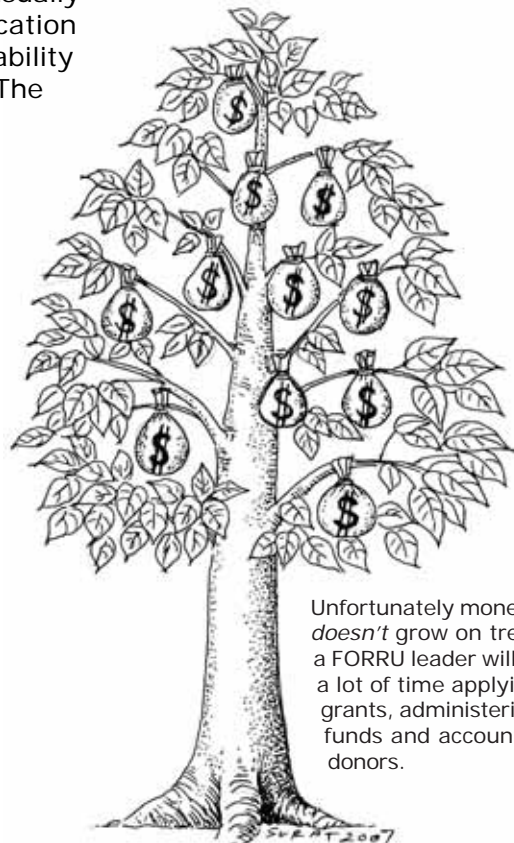
To begin with, if a FORRU is established within an existing, centrally funded, academic institution or research centre, it may be possible to make use of existing staff and facilities to initiate a forest restoration research program. However, as the research program expands, independent funding must be found.

For financial stability, it is best to maintain a varied “portfolio” of different funding sources, by dividing the work of the unit into clearly defined projects, each one supported by a different funding mechanism with different starting dates. In this way, the end of a single grant period does not result in staff redundancies and the collapse of the unit.

Since 1994, financial support of FORRU-CMU has come from several varied sources, including international grant-awarding bodies (e.g. the International Tropical Timber Organization); national government-based funding agencies both from abroad (e.g. the U.K.’s Darwin Initiative) and from Thailand (e.g. Thailand’s Biodiversity Research and Training Program) and the private sector; again both from abroad (e.g. Shell International Renewables) and from Thailand (e.g. Richemonde (Bangkok) Ltd.). Foundations and charities, especially those specializing in environmental concerns (e.g. the Plant a Tree Today Foundation, The U.K.’s Eden Project and World Wildlife Fund – Thailand Program) have also made significant contributions. Each type of funding agency has various advantages and disadvantages.

Multinational or international aid agencies usually impose complicated and time-consuming application and reporting procedures, to maintain accountability and transparency to their donor governments. The advantage of multinational agencies is that the grants they provide are usually large, but they are only suitable for organizations with highly trained administrative staff, capable of coping with the cumbersome bureaucratic procedures.

Grants provided by individual foreign governments can also be very generous to the host country. They are usually administered through institutions in the donor country, which may also receive some support from the grant. Involvement of foreign advisors from the donor country is often a condition of the grant, which can provide useful advice for a research program. This option is suitable where a good working relationship with an institution in the donor country has already been developed and the need for the involvement of foreign experts has been clearly identified.



Unfortunately money *doesn't* grow on trees. So a FORRU leader will spend a lot of time applying for grants, administering funds and accounting to donors.



Grants from domestic government organizations, especially those involved in implementing a country's obligations under the Convention on Biodiversity, are usually easier to obtain and require less bureaucracy, compared with international agencies, although the amounts granted are generally less.

Interest in forestry research from the private sector has been increasing lately, particularly as a result of growing concern over global warming and hence interest in carbon storage. Commercial companies are often keen to sponsor forest-related activities to improve their public image. Application procedures for private sector grants and administration of them are usually straight forward. However, before accepting sponsorship from the private sector, there may be ethical issues to consider. Images of your FORRU may be used to advertise a company's products or to promote an environmentally friendly image of a company engaged in environmentally damaging activities. Companies may try to claim planted trees they have sponsored as tradable carbon credits, which may disenfranchise local people. To avoid such dilemmas, make sure that the research project is supported by a company's "social responsibility" fund; not by its advertising or promotion budget and check the contract thoroughly. Try approaching companies involved in the energy industry (e.g. oil companies); those that use large amounts of energy (e.g. airlines, shipping agencies or car manufacturers) and those that use wildlife as logos.

Charities and foundations generally provide smaller grants but they usually require relatively simple administrative procedures. They have highly focused goals and many are involved in supporting environmental research.

By far the most comprehensive resource for searching for potential funding agencies is the "**CPF Sourcebook on Funding for Sustainable Forest Management**" at the website of the Collaborative Partnership on Forests: - <http://www.fao.org/forestry/site/8015/en/>. This excellent web site includes a downloadable database of funding sources for sustainable forest management, a discussion forum and newsletter on funding issues, as well as useful tips on preparing grant applications.



[www.fao.org/forestry/site/8015/en/](http://www.fao.org/forestry/site/8015/en/)

