



## **Multi-stakeholder workshop**

### **Review of forest rehabilitation initiatives in Guangdong: Lessons from the past**

**Venue: Research Institute of Tropical Forestry, Chinese Academy of Forestry, Guangzhou, May 27, 2004**

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## **Workshop report**

The key speakers, Mr. Zhang Minxing, Mr. Yin Guangtian and Ms Zhou Zaizhi, stated that Guangdong province had made great efforts to rehabilitate its degraded forest lands in the recent past. The project ‘Restoring degraded hills in five years, greening Guangdong in ten years’ for ecological benefits, started in 1985 achieved its target two years ahead of planned time. In 1991, the State Council recognised Guangdong Province as the first province to successfully afforest its degraded hills. From 1985 to 1998, forest cover increased from 27% to 56% of the land area. To further reinforce these achievements, the provincial government accelerated the construction of forests for ecological benefits with compensation paid to local people. Also reforestation management in Guangdong Province was opened up to foreign investors and private investment was promoted. These policies have propelled private ownership in forestry, and private reforestation initiatives are now active. A lot of practical experiences and lessons have been obtained in the process of Guangdong’s afforestation efforts over 20 years while a series of problems were also brought to the forefront.

This half-day workshop, “Review of forest rehabilitation initiatives in Guangdong: Lessons from the past” provided a platform for different stakeholders involved in rehabilitation of degraded forest lands in Guangdong province to share their experiences and perspectives on key rehabilitation problems /issues in the province, and recommendations for addressing them. Also identified were outputs required by various stakeholders for promoting and sustaining forest rehabilitation.

Dr. Takeshi Toma of CIFOR indicated that forestland degradation and rehabilitation were of worldwide concern. Rehabilitation efforts were more successful in some places than in others. In order to prevent the recurrence of wasted money and effort, it is important to exchange experiences. Lessons learned from the advanced experiences of Guangdong Province would be invaluable for the rest of China and for other countries to work towards more sustainable rehabilitation approaches.

### **Participants**

There were 30 participants in total, representing the Guangdong Forestry Bureau, relevant project implementing agencies, city and county forestry bureaus, state and collective forest farms, forestry departments of townships and villages, private enterprises, individual investors and forestry research institutes.

### **Process**

1. Formal opening of the workshop and introduction of guests by Ms. Zhou Zaizhi, Rehabilitation Review Project leader, Research Institute of Tropical Forestry (RITF)

2. Opening remarks by Mr. Zhang Minxing, Deputy Director, Division of Forest Management, Guangdong Forestry Bureau
3. Welcome remarks by Mr. Yin Guangtian, Deputy Director, RITF
4. Opening remarks by Dr. Takeshi Toma, CIFOR,
5. Introduction of the preliminary research findings under the study “Review and evaluation of forest rehabilitation initiatives in Guangdong Province” by Ms. Zhou Zaizhi
6. Group discussions and feedback on
  - Key issues and problems of rehabilitation of degraded forest lands
  - Main lessons and experiences learnt from the past
  - Main recommendations for promoting and sustaining forest rehabilitation, and to whom they should be addressed
  - Outputs required by various stakeholders for promoting sustainable forest rehabilitation
6. Proofreading and refining forest rehabilitation initiative database for Guangdong.

### **Group Classification**

The participants were divided into three groups according to the types of rehabilitation projects in Guangdong Province (Table 1). The members of the first group came from the provincial forestry bureau, and city and county forestry bureaus covering the National Afforestation Program, the Guangdong greening program and state forestry administration projects. The members of the second group came from city, county and district forestry bureaus covering the coastal and city greening projects. The members of the third group came from private enterprises, joint management forest farms and individual investors involved in forest rehabilitation.

### **Key issues /problems and recommendations**

**The first group** comprising of government agencies involved in past large-scale state afforestation projects, reports many different types of problems covering technical, financial, institutional, and policy/ legal aspects (Table 2). Their recommendations are closely linked to the problems listed and addressed to the provincial government, mainly the provincial forestry bureau. Technical issues include lack of effective measures to deal with pest and disease outbreaks, fires, and low use of improved species varieties. Their recommendations include building fire-break forest belts, adjusting tree species and forest structure to reduce flammability, providing incentives for using improved varieties and seedlings, and building a regional research institute or branch to address the key problems.

Financial constraints include inadequate funds for reforestation and for local forestry staff, and high timber taxes. They recommended increasing financial input into forestry by all levels of government, guaranteeing input of no less than 1% of local fiscal expense, and improving the supervision mechanism for using the funds. Besides tenure conflicts had to be resolved, coordination between different government departments improved, and effective punitive measures put in place for not fulfilling rehabilitation obligations. A unified information management system, with ability to download and share electronic version of forms and data would be very useful. Lastly but most importantly, very little attention was paid to subsequent forest management and tending compared to reforestation activities and this was critical for sustaining the rehabilitation effort.

**The second group** comprising of city, county and district forestry bureaus involved in coastal and city greening projects, find the technical issues of main importance in their projects which are primarily for ecological purposes. Their lessons arise from rehabilitation failures as a result of poor species-site matching, large-scale planting of fast-growing species (often exotic) and monocultures that were unable to cope with the poor site conditions or disturbances, severe pest and disease outbreaks, and fires (Table 3). Their recommendations include compulsory species-site matching by implementing technicians, establishment of forests with mixed species and structure better able to withstand unfavourable environments, using more native species and improved varieties, establishing forest belts as fire-breaks, and improving research on valuable native tree species. These recommendations are addressed to the responsible local forestry institutions.

Other key issues specified by them include shortage of afforestation funds, and land tenure conflicts due to unclear boundaries and scattered fragments of forestland to be rehabilitated. They believed it was critical for the government to play a key role in planning, organising and managing rehabilitation initiatives. It was also essential to strengthen the protection of already rehabilitated forests. There were also specific recommendations for research institutions such as CIFOR to study specific cases and look at resolving the constraints faced by them, and to hold more workshops like this to assess experiences and find timely solutions.

**The third group** comprised of private enterprises, joint management forest farms and individual investors provided the private sector perspective of rehabilitation on leased forest lands primarily for economic purposes. For this group, financial issues appeared to be of critical importance. However, these initiatives are a recent phenomenon and thus the projects may not have reached a stage where technical and other issues begin to pose a major problem. The key financial problems cited are high land rents, high forestry taxes, difficulties obtaining bank loans, and lack of a natural calamity insurance system for forestry investments (Table 4). They recommend providing greater financial incentives and refine the mechanism to facilitate private afforestation activities.

Besides tenure conflicts, pest and disease outbreaks, and fires are also noted by them as key problems with similar recommendations as in the other groups. There was need to safeguard the legitimate rights and interests of the person who leased and afforested the land, and to allow more freedom to the forest managers with regard to the logging quota. Recommendations are mostly addressed to the local and provincial government agencies.

### **Key lessons learned**

1. Policy stability is a must to encourage investment in, and long-term management and sustainability of afforestation efforts
2. Need to strengthen government administration of rehabilitation activities and provide clear policy guidance
3. Need to mobilize all levels of government and the civil society to rehabilitate degraded forestlands
4. To explore raising funds for reforestation from many sources and through a variety of means

5. Need to reduce forestry taxes and provide greater incentives for afforestation
6. The private sector could continue to play a positive role in rehabilitation of degraded forestlands. For encouraging further private sector efforts, related policies and measures need to be improved.
7. Successful rehabilitation was achieved by using the institution of joint-stock management and this is another promising approach
8. Tenure clarification and security is critical, and needs to be resolved
9. Site-species matching is a pre-requisite for promoting stand growth and maintaining long-term sustainability.
10. Mono-specific plantations largely result in poor-quality stands that are very vulnerable to pest, disease and fire damage. Mixed forests are more resistant.
11. Large-scale Eucalyptus species plantations established in mountainous areas have shown poor growth performance and also resulted in land degradation. Eucalyptus species are not suitable for “ecological forests” and native species show good potential.
12. Need for strengthening forest fire prevention and management systems
13. Need to intensify efforts to disseminate scientific knowledge and promote its application in rehabilitation efforts
14. It is important to classify the forests and forestlands according to the main functions they are expected to play – ecological or commercial, and develop appropriate rehabilitation efforts for the two.
15. Industrialization and urbanization have promoted forestry development and rehabilitation of degraded forestland, and this may be a way forward in many areas

### **Outputs required by different stakeholders**

There were six main output requirements listed by the different stakeholders (Table 5).

- 1) Simple practical technical guidebooks
  - For afforestation, management, monitoring, and evaluation
  - For seedling nursery establishment, fertilizing, and preventing and controlling pests and diseases for commonly-used tree species

*To be disseminated to provincial and local governments through meetings and training courses*
- 2) Setting up management systems (CDs, software, handbooks)
  - For monitoring and managing forest fires
  - For managing information on afforestation/ forest rehabilitation
  - For forest resource survey such as remote sensing techniques

*To be provided to provincial and local governments through workshops and training courses*
- 3) Supply germplasm and seedlings of superior native species or species of high pest and disease resistance, and handbook on planting techniques
 

*To be supplied to local governments, and township and private enterprises by Research Institutes via meetings and training courses.*
- 4) Trained forestry personnel in local governments, and trained professionals for hire by

township enterprises. *Paper, handbook, training courses, workshops for professionals*

- 5) Policy document outlining mechanisms/methods for resolving forestland tenure conflicts.  
*Requested by individual investors*
- 6) Longstanding technical assistance for afforestation from the forestry department.  
*Requested by individual investors*
- 7) Develop a financial policy through dialogue for supply of afforestation funds from governmental finance

## **Conclusions**

The private sector of relatively recent origin placed major emphasis on financial issues, while the city and coastal ecological greening projects focused more on the technical problems that they have already been facing. The larger government rehabilitation projects considered a whole array of issues across the spectrum.

The five overarching problems indicated by all stakeholder groups involved with different sorts of rehabilitation projects are a) pest and disease outbreaks affecting the largely exotic mono-specific plantation landscape, b) fire problems, c) land tenure conflicts due to unclear boundaries and fragmented forestlands, d) shortage of funds for reforestation and e) high forestry taxes. These affect the initiation and sustainability of any forest rehabilitation efforts.

Research and actions by the provincial government were called upon to help deal with pests and diseases, as also mixed species forests to reduce vulnerability to pests and fires, using more native species and improved superior varieties to withstand unfavourable environments, and compulsory species-site matching. Clarification of land tenure and settling of disputes was a must for sustainable rehabilitation. Private entrepreneurs and companies in particular demand the safeguarding of their use rights and interests given their efforts to lease and afforest the land.

To improve funding for reforestation efforts, it was suggested to explore raising funds from many sources and through a variety of means. Increasing the financial input into forestry by all levels of government was recommended, with guaranteed input of no less than 1% of local fiscal expense, and improved supervision mechanism for fund usage. Privatisation of rehabilitation initiatives for economic profit is one critical measure but the private parties call for greater ease of bank loan procurement. There was also a need to reduce forestry taxes, remove the logging quotas, and provide greater economic incentives for afforestation. Joint-stock management is another promising rehabilitation approach.

Additional lessons learnt are that policy stability is a must to encourage long-term management and sustainability, as also is the greater dissemination and use of scientific knowledge. The efforts of all levels of government and the civil society are required to rehabilitate degraded forestlands, and different sectors could play a role in rehabilitation of ecological or commercial forests. Industrialization and urbanization have promoted forestry development and rehabilitation

of degraded forestland in Guangdong, and this may be a way forward in other similar areas in China.

In terms of outputs, provincial and local governments look for practical technical guidebooks and computerized management systems for afforestation, fires, and forest resource inventory; and workshops and training courses to enable them to use these tools. Local governments and enterprises seek trained forestry professionals and supplies of superior pest-resistant seedlings, including of native species. Individual investors request longstanding technical assistance from the forestry department, and a policy document outlining mechanisms/ methods for resolving forestland tenure conflicts. Local government agencies would like a policy dialogue to generate and supply afforestation funds.

**Table 1. Group Classification**

| <b>The first group</b>  | <b>The second group</b>   | <b>The third group</b>   |
|---|---|--|
| Group leader: Zhou Zaizhi (RITF)  | Group leader: Ma Huaming (RITF)   | Group leader: Liang Kunnan (RITF)  |
| Members:<br>Division of Forest Management of Guangdong Forestry Bureau<br><br>Project Office of Guangdong Forestry Bureau<br>Xijiang Forestry Bureau of Guangdong Province<br>Forestry Bureau of Shixing County<br><br>Forestry Bureau of Wengyuan County<br>Forestry Bureau of Yangchun City<br><br>Forestry Bureau of Luoding County<br>Forestry Bureau of Yunan County | Members:<br>Forestry Bureau of Baiyun District of Guangzhou City<br>Forestry Bureau of Yangxi County<br><br>Forestry Bureau of Dianbai County<br>Forestry Bureau of Zhongshan City<br>Forestry Bureau of Shaoguan City<br><br>Shenzhen Lu Bao Jia Greening Ltd.<br><br>Waseda University, Japan<br>RITF | Members:<br>Meizhou Wei Hua Company<br><br>Jieyang Lu Yand Company<br><br>Forestry Bureau of Kaiping City<br><br>Individual investor<br><br>Kaiping Zhen Hai forest farm<br><br>Collective forest farm of Xiangguang township, Kaiping city<br>RITF<br>CIFOR |

**Table 2. Group 1 listing of key issues and recommendations**

| <b>No.</b> | <b>Key issues/ problems</b>   | <b>Recommendations</b>   | <b>To whom?</b>   |
|------------|---|--|---|
|            | <b>Technical</b>  |  |   |
| 1          | Inadequate attention to forest pests and diseases. Lack of specific protection and control measures   | Work on preventing and controlling forest pests and diseases   | Provincial forest conservation center and station, forestry bureau                  |
| 2          | Severe forest fires caused by human activities. Underestimating number of forest fires and area burnt due to fear of bearing responsibility | Monitor and regulate field fires strictly. Build fire-break forest belts and adjust species and structure to reduce flammability | Provincial government, Forest Fires Prevention Office of Provincial Forestry Bureau |
| 3          | Low usage of improved varieties   | Provide incentives for use of improved varieties and seedlings   | Provincial government, Provincial forestry Bureau, Finance Department               |
| 4          | Need for improved forestry technology   | Build regional, high level research institute or branch to address the key problems  | Provincial forestry bureau, Provincial department of science and technology         |
|            | <b>Financial</b>  |  |   |

|   |   |   |  |
|---|---|---|--|
| 1 | Shortage of reforestation funds   | Increase financial input into forestry by all levels of government, guarantee input of no less than 1% of local fiscal expense, and improve the supervision mechanism of usage of the funds | Government at all levels, National Peoples' Congress |
| 2 | Insufficient funds for administration and staff salary in the local forestry departments  | Funds to be supplied by governmental finance department for staff expense at local government level   | Provincial government                                |
| 3 | High timber taxation, particularly the forest tending fee and the forest regeneration fee after logging   |   |  |
|   | <b>Institutional</b>  |   |  |
| 1 | Increased land tenure conflicts because of unclear boundaries and scattered fragments of forestland   | Clarify tenure  |  |
| 2 | Lack of coordination and consistency among forestry departments, municipal authorities and the transportation department with regard to supervision of transport and sale of logs |   |  |
|   |   | Unify information management, download and share electronic version of forms and data   | Provincial forestry bureau                           |
|   | <b>Policy/ legal</b>  |   |  |
| 1 | Little attention paid to forest management and tending compared to afforestation/ reforestation   |   |  |
| 2 | Inadequate and impractical punitive measures for not fulfilling rehabilitation obligations  | Levy a tax for not fulfilling rehabilitation commitments  | Provincial forestry bureau, tax bureau               |
| 3 | Poor implementation of policies for regenerating logged-over areas  | Establish a system for generating sufficient regeneration funds and using it specifically to regenerate logged-over forestland  | Provincial forestry bureau                           |
|   |   | Remove logging quotas for private afforestation and allow forest landowners to make their own management decisions  | Provincial forestry bureau                           |
|   |   | Reduce and cancel the debts owed by the local forestry departments towards bank loans taken for fulfilling "the greening targets" of the program of 1985-1995                               | Provincial government                                |
|   | <b>Marketing</b>  |   |  |
| 1 | Poor marketing of forest products. Insufficient public participation.   |   |  |

**Table 3. Group 2 listing of key issues and recommendations**

| No. | Key issues/ problems   | Recommendations   | To whom?                                |
|-----|--|---|---|
|     | <b>Technical</b>   |   |   |
| 1   | Severe pest and disease outbreaks  |   |   |
| 2   | Severe forest fires  | Prevention and better management of forest fires. Establish fire-breaks including forestbelts                 | Responsible local forestry agency       |
| 3   | Little attention paid to improved varieties of native species  | Supply improved tree varieties and seedlings, and of native tree species                                      | Forestry research institute             |
| 4   | Trees planted did not match the local site conditions.   | Insist on the principle of matching trees with the soil and sites for the implementing technician             | Department of forest management         |
| 5   | The government promoted widespread planting of some fast-growing tree species irrespective of site conditions, which failed and resulted in substantial economic losses and land degradation | Choose and promote appropriate species for different sites  | Local forestry management department    |
| 6   | Dominated by monocultures which are unable to cope with poor site conditions or disturbances, and result in failures   | Expand the establishment of mixed forests which can cope better with unfavourable environments                | Responsible local forestry institutions |
| 7   | Widespread planting of <i>Eucalyptus</i> species resulted in land degradation  | <i>Eucalyptus</i> should not be planted in "ecological forests" to prevent land degradation                   | Provincial forestry bureau              |
| 8   | Little research on native and valuable tree species  |   |   |
|     | <b>Financial</b>   |   |   |
| 1   | Shortage of afforestation funds  |   |   |
|     | <b>Institutional</b>   |   |   |
| 1   | Increased land tenure conflicts because of unclear boundaries and scattered fragments of forestland affects rehabilitation   |   |   |
| 2   | Need improved planning, organising and management of rehabilitation initiatives  | Government to develop a proposal for initiation and organization of afforestation, and to play a leading role | Provincial and city forestry bureaus    |
|     | <b>Policy/ legal</b>   |   |   |
|     |  | Strengthen the protection of coastal shelterbelt forests, and establish related regulations                   | Provincial forestry bureau              |
|     | <b>Miscellaneous</b>   |   |   |
|     |  | Hold more workshops like this to sum up the experiences and try to find solutions and strategies in time      | CIFOR                                   |
|     |  | Make a thorough investigation of a specific project, and provide recommendations to solve the problems        | RITF, CIFOR                             |

**Table 4. Group 3 listing of key issues and recommendations**

| No. | Key issues/ problems  | Recommendations   | To whom?   |
|-----|---|---|--|
|     | <b>Technical</b>  |   |  |
| 1   | Lack of effective method to prevent and control pest and disease outbreaks                                | Provide effective methods to prevent and control plant pests and diseases   | Forestry research institute                          |
| 2   | The conflict between slash and burn method of land preparation for planting and prevention of forest fire | Solve conflicts between burning slash and preventing forest fires   | Local forestry bureau                                |
|     |   | Provide fertilizer prescriptions for afforestation tree species.  | Scientific and technical department                  |
|     | <b>Financial</b>  |   |  |
| 1   | High land rents for private enterprises   |   |  |
| 2   | High forestry taxation  | To reduce forestry taxes and provide greater incentives for afforestation   |  |
| 3   | Difficulties obtaining bank loans   | To facilitate loan procurement  | Local government                                     |
| 4   | Lack of a natural calamity insurance system for forestry investments                                      |   |  |
|     | <b>Institutional</b>  |   |  |
| 1   | Too many conflicts about forestland tenure and forest boundary  | To settle land tenure conflicts and disputes.<br><br>Safeguard the legitimate rights and interests of the person who leased and afforested the land | Local government                                     |
|     |   | Government's participation at all levels to rehabilitate the degraded hills   | Government at all levels                             |
|     | <b>Policy/ legal</b>  |   |  |
|     |   | Refine the mechanism for facilitating private afforestation activities  | Provincial forestry bureau                           |
|     |   | Allow more freedom over logging quota   | Provincial forestry bureau,<br>Provincial government |

**Table 5 Outputs required by the stakeholders**

| <b>Agency</b>                                       | <b>Content</b>  | <b>Types of products</b>      | <b>Style of dissemination</b>  |
|---|---|-------------------------------|--|
| <b>Provincial forestry department</b>               | 1. Simple technical guidebooks for afforestation, management, monitoring, and evaluation  | Pamphlet, guidebook           | Mailing, meeting, training course  |
|   | 2. Application of '3S' (GIS, GPS, RS) technology  | Reading materials, handbook   | Training course  |
|   | 3. Information management system for rehabilitation and afforestation   | Software or CDs               | Training course  |
|   | 4. Monitoring and management system for forest fires  | Software, handbook            | Training course, workshop  |
| <b>Forestry bureau of city, county and district</b> | 1. Guidelines for seedling nursery establishment, afforestation, fertilizing, prevention and control of pests and diseases for commonly-used tree species | Book, magazine and pamphlet   | Mailing, training, provide related information through network platform          |
|   | 2. Practical techniques for the survey and investigation of forest resources, such as remote sensing technique  | CD, software                  | Mailing, training course   |
|   | 3. Set up information management system for forest rehabilitation   | Software and book             | Training course  |
|   | 4. Proposal for local government (city, county, district) to provide afforestation funds  | Setting up a financial policy | Issue document, workshop   |
|   | 5. Provide germplasm resource of native tree species, and information on planting techniques for the same   | Book and handbook             | Dissemination by scientific research institute, advertisement, meeting, training |
|   | 6. Enhance the quality and level of forestry personnel in this field  | Paper, handbook and report    | Training course, workshop  |
| <b>Township enterprise</b>                          | 1. Trained forestry professionals   | Training                      | Training course  |
|   | 2. Supply of tree species of high pest and disease-resistance   | Super seedlings               | Distributed by scientific research institute                                     |
| <b>Private enterprise</b>                           | 1. Superior native tree species and their planting techniques   | Book                          | Distribute book  |
| <b>Individual investor</b>                          | 1. Forestry department to provide continuing technical assistance for afforestation by individual investors   | Policy document               | Issue document, training course, workshop  |
|   | 2. Resolution mechanism and method for solving forest land tenure conflicts   | Policy document               | Issue document   |