

CHAPTER 4 AN INVESTMENT STRATEGY

4.1 Context of the Investment Strategy

The basic investment principle is to consider each country's financial capacity and mobilize external and internal resources for mutually beneficial cooperation. When considering the financing of DSS related investments, there are significant differences in the problems faced by the DSS affected countries and the problems faced by the DSS source countries. The proposed Investment Strategy is consistent with each country's NAP, Agenda 21 and other programs and its implementation is needed to deal with transboundary environmental problems such as DSS.

The ongoing activities in each DSS-source country that relate to prevention and control of DSS fall into several broad groups:

- Those primarily aimed at combating desertification and/or preserve biodiversity (e.g., the ADB/GEF OP 12 in the PRC); and
- Reforms to land tenure, access and use rights and other policy measures designed to improve land stewardship.

Each country has its own strategy for funding its national development program.

- At the core of national development planning is the recognition that the future will depend upon sustainable and balanced development across the whole country.
- Sound ecosystems are fundamental to achieving nationwide sustainable development.
- Each country has obligations as a signatory to the various international conventions (e.g., United Nations Convention to Combat Desertification, United Nations Framework Convention on Climate Change, and Convention on Biological Diversity)

Essentially, DSS prevention and control involves a two-tiered investment strategy. At the first tier, the focus is on reducing damages and mitigating the impact of DSS on public health and safety, property and everyday life. Important questions include: (a) how much money is required to perform DSS prevention and control activities, (b) how those funds may be raised, and (c) how to allocate the funds among alternative activities. These types of questions are referred to as "level of protection" issues. In the context of DSS prevention and control, defining a particular level indicates the extent to which certain programs would be expected to reduce the detrimental economic damages and social impacts of DSS in affected areas.

It is difficult to determine in a precise manner the optimal level of DSS prevention and control, simply because DSS cannot be totally eliminated. Meanwhile, it is equally difficult to quantify the effects of prevention and control programs. However, one of the DSS prevention and control objectives is the precision in predicting the occurrence of DSS events. Level of program effectiveness can also be determined in two ways, namely, (i) DSS return intervals or DSS cycles, which provide an estimate of the average time between DSS events at chosen monitoring sites, and (ii) the intensity and extensiveness of damages. While the first aspect is straightforward, the second aspect is concerned with the cost of DSS prevention and control. Using the "Least Cost-Plus-Loss" criteria that have been discussed earlier in the report, the level of DSS prevention and control in financial terms may be viewed as the summation of two elements, i.e., (a) the direct and indirect costs of DSS damages, and (b) the costs of replacement and restoration. As far as the value of property destroyed by DSS, it is acceptable to use depreciated value or replacement value, at prevailing market prices whenever they are available.

From a landscape perspective, financial resources may be allocated for the restoration of DSS-damaged areas where these (i) have proven nature conservation interest, (ii) are a particular feature in the landscape, (iii) are of high historic value, and (iv) have a high amenity value, i.e., where it is visually prominent.

It is difficult to say by how much a particular prevention program would achieve in terms of reducing the impact of DSS. Due to the concentration of economic assets in cities, it may be a much more effective strategy to concentrate on those measures that help reduce effects of dust storms on cities by improving forecasting capacity as well as disaster preparedness and management. However, effective DSS prevention and control must start at the source areas, and that is why the second tier of the investment strategy is also essential because of its central concern with addressing the underlying causes of DSS, such as overgrazing, over-cultivation, unsustainable use of water resources, and so on. Models have been developed to predict the levels of vegetation cover required for stability given certain environmental conditions¹. After validation, these models could be applicable to determining grazing areas, and identifying the specific sites and the required amount of ground cover. There is scope within the context of the demonstration projects to refine these models. From the point of view of local herders and planners, it is important to maintain these critical cover levels in order to avoid overgrazing and allow dust entrainment.

4.2 Key Points for Consideration

The following is a suggested Vision Statement to guide development of an investment strategy for DSS prevention and control in the Northeast Asian region.

Vision Statement:

The health, safety as well as welfare of the peoples in DSS source areas and DSS impacted areas and the economic, social and environmental sustainability of the Northeast Asian region will be safeguarded through implementation of a region-wide DSS prevention and control strategy. This strategy will be realized by:

- applying the principles of cooperation;
- adopting a sound emergency management approach that includes risk mitigation, preparedness, response and recovery;
- utilizing the respective resources and expertise of individuals, communities, industries, governments of various levels and international organizations in accordance with their respective and shared responsibilities;
- mobilizing and implementing an appropriate and affordable level of investment of resources over time, commensurate with the values at risk;
- promoting Northeast Asia regional cooperation, sharing of knowledge, information, and services; and
- adopting the transparent investment mechanism.

The investment strategy will provide a framework that is flexible and can effectively harness the capabilities of all partners. It will provide useful guidance for the development of detailed implementation and investment plans. A business-planning approach is likely to work best. This implies working around specific actionable areas, with potential for concrete forms of collaboration. Broadly, such actionable areas would pertain to one of the following main clusters: policy and institutions, investment opportunities, management support and monitoring and evaluation, technical assistance and capacity-building support.

The strategy will have the following features:

¹ Heinschmidt, R.K and Stuth, J.W. (eds) 1991 *Grazing management: An ecological perspective*. Timber Press, Portland and Leys, J.F. 1991. The effect of prostrate vegetation cover on wind erosion. *Vegetation* 91:49-58

1. Relevant and responsive – the strategy will be of relevance to mandates of various levels of government and international organizations and be aligned with their existing and emerging priorities. DSS prevention and control represents a significant expenditure for governments. The strategy will be responsive to other related issues including sustainable development, public health and safety, food security and welfare in rural areas, and climate change.
2. Integrated – mitigating the risks and impacts of DSS will be fully incorporated into aspects of land and resource management as well as social development at large.
3. Science-based – the strategy will be based on a thorough analysis of current capacity, DSS trends, available options and socioeconomic impacts of DSS. Options will be defined on the basis of scientific analyses and best practices.

4.3 Partnerships and Options for the Investment

Viable partnerships for investing in projects are based on shared objectives, well defined tasks or actions, clear delineation of obligations and of each partner's responsibility, respect for each partner's internal modalities and operating procedures, and financial resources and technical support from partners to back up the partnership.

The Inner Mongolia Autonomous Region Forestry Department, which has been actively involved in planning the PRC demonstration projects, has proposed a financing arrangement of cost-sharing on a 1/3:1/3:1/3 basis. Specifically, for the four proposed demonstration focus areas, a total investment of RMB492 million (approximately US\$61.5 million) will be required. It is suggested that one third will come from government of various levels—principally the central government, one third from GEF and other donors in the forms of grants and loans, and the last one third from the private sector and local communities.

Of the three major funding sources, the government component appears to be earmarked without much problem. Senior officials that the consultant team met have reassured repeatedly that the recommended demonstration focus areas in Inner Mongolia Autonomous Region are precisely the PRC Government's priority areas. The assistance to be requested from external financial sources will comprise grants and loans. Grants will be conditional on the preparation of an approved management plan, and the grant rate may be flexible, higher for activities where multiple objectives will likely be achieved. The third financial component will require more work than the other two sources, in terms of mobilization and arrangements. Nevertheless, some very encouraging signs are emerging in both Mongolia and the PRC, regarding the willingness of the private sector to get involved in desertification control. In June 2004, a group of Chinese entrepreneurs were gathered in the Alashan League and reached a well publicized "Alashan Declaration", vowing to commit a significant amount of financial resources to help with DSS prevention and control. Perhaps, the most successful experience of private sector involvement with desertification control came from the Dongda Mongolian King Group Co., which is based in the Dalate Banner of Erdos, one of the four proposed demonstration project areas in Inner Mongolia (Box 4.1).

4.4 Recommended Investment Strategies

It is recommended that a *demonstration project approach* be adopted in implementing the investment strategy. External financial resources should finance the implementation, with domestic counterpart financing and contributions from the private sector and local communities. The demonstration projects are of the utmost importance to the success of any investment strategy or regional master plan.

Box 4.1 Private Sector Involvement in Desertification Control

Incorporated in 1996 on the basis of the Dongda Cashmere Products Company Ltd., which was established in 1991 in the Inner Mongolia Autonomous Region, Dongda King Group Company Ltd. possesses 16 member companies in 5 fields such as cashmere products, highway and bridge construction, coal mining and marketing, paper making, ecological development and goat breeding. The total assets of the Dongda King Group amount to 0.7 billion yuan, with 0.43 billion yuan net assets. The Group has donated more than 10 million yuan to support public welfare initiatives. It ranks 127th among the Top 500 private enterprises in the PRC, and has been evaluated with class AAA credibility for years.

Of relevance are two of the subsidiary companies, namely, the Dongda Mongolia King Paper Industry Company, and Dongda Ecological Construction Company. Dongda has established an ecological base to address the root causes of grassland degradation through increased forage production and introduction of improved breeds, and encouraged development of pen-feeding livestock production systems in order to reduce the stocking rates on natural grasslands.

Dongda's ecological projects include sandy land improvement, forestry, grass industry, with an aim to restore ecological conditions and improving local people's living standards. In particular, the industrial product of desert willow integrated utilization in Kubuqi desert. This project has four components: the first one is the paper board made of desert willow wood pulp with a rated annual capacity of 0.5 million tons with an investment of 2.1 billion yuan, the initial stage capacity being 0.1 million tons; the second one is the construction of 3 million mu² desert willow industrial material base in Kubuqi desert with an investment of 0.3 billion yuan; the third one is 0.25 million white cashmere goats base with fenced breeding with an investment of 0.15 billion yuan; the fourth one is the industrial project of annual treatment capacity of 0.1 million beef cattle and meat sheep with an investment of 0.3 billion yuan.

In order to start these projects, Dongda has invested 40 million yuan to acquire the former paper mill in Dalate Banner to form a paper company and ecological development company and started the development of desert willow plantation base for pulp making. The Dongda paper company has manufactured high-strength corrugated and box board finishing paper with desert willow.³ It is estimated that, upon completion of the projects, annual output values will reach 3 billion yuan, which will provide many employment opportunities for local residents and provide 300 million yuan to local farmers and herders as direct source of income. This is a "company + household" model.

For years, participation by local people in land degradation control was encouraged in PRC, but the outcome was generally sub-optimal. Incentives are important policy instruments to enhance participation by rural communities in rehabilitation activities. Incentives that promise immediate and short-term benefits are required to ensure local participation. However, such incentives may be counterproductive when long-term ecological rehabilitation is the major objective.⁴

The involvement of private sector does not have to be limited to domestic firms. ROK and Mongolia have collaborated in this respect, with positive results. The Korea-Mongolia Joint Research Project for Development and Utilization of PV/Wind Power Generation Systems for Rural Electrification in Gobi Desert commenced in June 2003. Operated by the Daesung Institute for Clean Energy, the objective of the project is twofold: (1) by application of Korean PV/Wind power products in the severe weather conditions in Mongolia, accomplish system optimization, technology upgrade and marketability of products; (2) realize new market and Northeast Asian cooperation model, through cooperation between the two nations. Successful installation and test run were completed in October 2003.

Located at Urn and Naran Soum, the solar Ger⁵ system comprises two types, namely, (i) 50 W economy type for nomads, i.e., DC supply, 6 hours capacity for 1 bulb (12 W), 1 B/W TV (20 W) & 1 radio (8 W), and (ii) 150 W luxury type for nomads, i.e., AC supply for one household of 3 Gers or an owner of more electric appliances, capacity for 2-3 bulbs (12 W), 1 color TV (50 W) & 1 radio (8 W). A hybrid system for Naran Soum was installed with 8 kW (PV 5 kW+Wind 3 kW) as electric supply for small village or public building, such as school, government office, community hall and hospital. Besides, system facilities at a Ulaanbaatar site is capable of supporting some solar street lamps and a solar fountain.

The project is scheduled to last for two years (from June 2003 to May 2005), at a total cost of 975 million Won (approximately US\$1 million). In terms of environmental benefit, through building of the solar power plants in the Gobi desert, the project is expected to reduce almost 30% yellow dust that originates in the desert area in Mongolia. The project has considerable socio-economic benefit as well. As a high-tech system, the project will boost related domestic industries and create employment opportunities.⁶

² 15 mu = 1 ha

³ Brochure on Inner Mongolia Autonomous Region Dongda King Group Company Ltd., undated.

⁴ J.J. Kessler and P. Laban. 1994. Planning Strategies and Funding Modalities for Land rehabilitation. Land Degradation and Rehabilitation 5: 25-32.

⁵ Ger is the traditional Mongolian tent that is transportable. It is called yurt in other regions of the western PRC and central Asia

⁶ Based on an undated brochure produced by the Daesung Institute for Clean Energy.

The Northeast Asian Forest Forum (NEAFF), which is a non-governmental organization (NGO) founded in 1998 for the restoration and conservation of forests in the Northeast Asian regions, is based at Seoul, Korea. The NEAFF is composed of representatives from the business sector, environmental organizations, forester's group, academic communities, and individuals from the Northeast Asian countries. The unique characteristic of the NEAFF is the wide participation and support financially and technically from the government body (support from Korea Forest Service and others), private companies (Yuhan-Kimberly, Ltd. which initiated campaigning "KEEP KOREA GREEN" 20 years ago), public fund (Green Fund), and ordinary citizens.

The international cooperation is directed towards rehabilitating degraded forestlands and combating desertification, such as combating desertification in the PRC (around 400 ha in inner Mongolia Autonomous Region) and Mongolia (450 ha in Selenge and 40 ha in the Gobi Desert) by planting trees and sand fixation, exchanging personnel and information among the participating countries, organizing international workshops and seminars with the UNCCD, the UNDP, and other international organizations. The total fund size is around US\$ 1 million for these activities from 2003-2006. Combating desertification is not the sole responsibility of each government, but rather it involves partnership and collaborative interdependency among NGOs, international society, various business sectors, scientists, and community leaders.

It makes economic sense to adopt capital-extensive management strategies in some areas while taking a capital-intensive management approach in some other areas. Changes in budgeting procedures are required; in particular, a long-term approach to programming is preferred. The cumulative effects of DSS damages need to be financially evaluated from a long-term perspective. By not taking a long-term investment-return approach, returns on DSS management activities in terms of reduced future losses and reduced control expenditures may be negative.

Variability in levels of DSS damage must be incorporated into the investment strategies. Because of the deficiency in information regarding storm damage functions, incorporating variability and conducting sensitivity analyses are highly important since they can illustrate the range of potential impacts.