



Desk Appraisal
Second Phase IND063 of the
Indo-Norwegian Environment Programme
Karnataka, India



By Paul Vedeld



Noragric Report No. 9



DESK APPRAISAL

SECOND PHASE IND 063
of the
INDO-NORWEGIAN ENVIRONMENT PROGRAMME
KARNATAKA, INDIA

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1. INTRODUCTION AND OUTLINE

This “short notice and swift” desk appraisal is written as a background document for RNE in their further work with establishing a new phase of IND 063 the Indo-Norwegian Development programme in Karnataka. Since the appraisal is meant for internal use by well-informed officers at RNE, the report does not give much background information. The report is based on my present knowledge, and on the received documents:

- 1) *IND 063 Indo Norwegian Environment Programme Project Proposal phase 2;*
- 2) *Mandate for dialogue, RNE: 15.04.02*
- 3) *Letter from NORAD 22.05.02 to NORAGRIC Request for appraisal*
- 4) *Request from RNE to Fag 30.05.02 for Appraisal of IND 063*

In addition I have used the “Environment and Development in India - Background Report (Vedeld et al 2001), especially chapter 4 and 8.

I would also like to mention webpages (<http://kar.nic.in>) that covers various government bodies and policies in Karnataka working with the environment, including Department of Environment and Forestry, INEP, KSPCB, Dept. of Finance etc.

This appraisal document follows the procedures outlined in NORADs appraisal format. I have added a separate section to the continuation of phase I in chapter 6, which de facto is a separate project suggested to consume around 20 % of total funds.

Despite the very short time horizon on this assignment and on my input, I still hope that the observations and comments made, can be of use for the Embassy in the further work with establishing a new Phase II of the IND 063. Despite several critical comments and suggestions throughout this report, they are made in the spirit it should be possible and desirable to continue working in the environmental field in Karnataka. If there are questions or comments, I would be more than happy to assist with additional or more in-depth comments.

A particular concern for me in this work has been the bulk of activities suggested in the new phase implies a new structure; with new actors, new activities, new institutional arrangements and distributions of resources, authorities, lines of powers and decision making as well as new processes and implementation routines. Experience tells us that institutional arrangement issues are main risk factors for any development assistance programme. Because this arrangement is new and novel, it is obvious that a field visit had been wise to include. Unfortunately, there was not time for that this time, but I still hope my inputs may prove useful.

2. ASSESSMENT OF RELEVANCE

2.1 Brief state description

Karnataka is a southern state in India 45 mill. people. Karnataka has an area of 191 791 sq.km. The State has rich mineral and forest resources. Karnataka can be divided into four distinct climatic zones. The hot and humid coastal plains form a narrow strip between the Arabian Sea and the Western Ghats receiving rainfall ranging fro 2500 to 3000 mm. 68% of the area receive less than 700 mm. Rising from the coastal plains, the Western Ghats forms a zone rich in biodiversity and comprises 43% of the State's forest area. The two other zones belong to the Deccan plateau and are known as Northern interior and Southern interior Karnataka. Karnataka has perennial rivers and wetlands. The larger part of the non-mountainous area is devoted to agriculture. Around 63% of the State's area is cropped. 40% of State incomes come from agriculture. 69 % of the population work in agriculture. Karnataka is India's biggest producer of coffee. Agricultural intensification has been associated with increasing use of fertilisers and pesticides, which has contributed to soil and water pollution.

Karnataka is rapidly urbanising and 31% of the population is now found in urban areas. The economy is dynamic and Karnataka is known for achievements in information technology and for its centres of higher education. Karnataka's major cities like Bangalore, Mangalore and Mysore continue to attract people from within as well as outside the State. The continuous growth of industrial and commercial activities, modern transport and urban settlements has generated major environmental challenges in the State, in terms of pollution of water, air and soils. Industrial and municipal waste management has become a major concern for policy makers as well as communities. Degradation of forests is another major concern as it threatens the survival of endemic species while causing soil erosion. The State's declared policy is to keep 33% of its area under forests; at present it is 16%. Of the existing forests, about 50% is considered degraded. The State was known for its human-made water bodies - lakes of varying sizes. Many lakes have been subject to pollution by dumping of solid waste and sewage.

Over the last 10 years, Government of Karnataka has increasingly been addressing the many environmental challenges. The INEP intervention is one of several donor-sponsored initiatives in the state. INEP came at a time when the State was in need of projects that dealt with the adverse environmental effects of deforestation, expanding industries and rapid urbanisation (MTR, 1999).

2.2 Relevance relative to national plans and budgets

The general Indian environmental policies, legal, economic and organisational frameworks and main policy statements have been presented in the Environmental Background Report to the Embassy and are not repeated here (Vedeld et al 2001).

In Karnataka, state governments policies are found in the Development Plans (at present the Ninth Development Plan (1997- 2002). Here overall commitments are made to reduce pollution, to increase conservation and sustainable use of natural resources. Information on policies is also found in the annual reports from the Department of Environment and Ecology (DEE), the Karnataka State Pollution Control Board. etc.

The main aim of DEE is to coordinate activities, create awareness, to undertake EIAs on state activities, to oversee pollution control measures, to protect biodiversity in the state, to work

with Coastal Zone Management and to implement the National River Conservation Action Plan. Looking at budget figures for environmentally related issues, ecology and environment is given less than 0.06% of the budgets. Including all relevant programmes and also wildlife and forestry, around 5% of the total budget could be said to be environmentally related (special area programmes, some rural development schemes, non-conventional energy, flood control).

INEP activities have had good political support and been given due recognition by the government. In the phase II programme; both the Chief Minister, and Minister for Forest, Ecology and the Environment underline the importance of the past and the suggested phase; and they both highlight the new thrust on “conserving the environment while improving quality of life” and also include emphasis on the importance devolution of powers from central to district and lower levels of governance.

Summary: The programme is well in line with national and state levels plans for environment and development related activities in general. And in particular, the devolution of powers and resources to lower levels of governance fits well with Karnataka’s policies in this a field.

2.3 Coherence with Norwegian development policies and principles

The overall aim for Norwegian development co-operation is to contribute to lasting improvements in economic, social and political conditions for the populations of developing countries. Development assistance should in particular benefit poor and deprived people. Least developed countries are given particular emphasis. Development assistance should be designed so that it seeks to avoid dependence on continued assistance and enhances a genuine recipient responsibility for the various activities embarked upon.

Norwegian development co-operation aims at strengthening the developing countries' own ability and willingness to reduce their poverty problems. It also aims at promoting economically and environmentally sustainable development and to enhance good governance through institutional capacity building in planning and management activities. Important target areas for Norwegian development assistance include the strengthening of sectors such as food production, health, natural resource management, education and the promotion of employment opportunities; in order to ensure that development processes also benefit poor people. Such strategies must be developed and adapted separately for the individual developing country.

General policies on development co-operation are laid down in the Government’s annual budget plans and their long-term plans. In addition, the Report to the Parliament no. 19 (1995-96) is giving the present main focus for Norwegian development efforts.

General policies on the environment are laid down in the Strategy for Environment in Development Co-operation (1997-2005) from the Min. of Foreign Affairs. In these policies, four key areas are mentioned:

1. Development of sustainable production systems/management of natural resources
2. Conservation and sustainable use of biological diversity
3. Reduced pollution of soil, air and water
4. Cultural heritage preservation/management of natural environment’s cultural values

The proposed new programme is in line with general Norwegian development and environmental specific assistance policies. It combines environment and development

activities in a good and innovative way. The phase II also has a much more explicit focus on targeting poor and vulnerable groups, compared to Phase I. I would also remark that the proposed programme in fact covers at least three of the environmental priority areas. The programme is also in line with the approved activity plans from the Embassy.

2.4 Relevance relative to user's needs and priorities

In the proposal the key users are defined as the authorities in charge of natural resource management as well as local people and local government bodies working with activities to enhance the livelihood of poor people. The programme will clearly be relevant to these groups' needs and priorities. It is still recommended that the planned activities be spelt out more clearly in cooperation with relevant partners.

3. ASSESSMENT OF PROGRAMME DESIGN

In the present section the underlying analysis, knowledge needs, consistency, realism, and assessment of the indicators suggested to evaluate the programme performance are discussed. A crucial part of a programme design is its organisational structure. However, this issue is mainly discussed in chapter 4 under institutional aspects.

3.1 Quality of underlying analysis and planning activities

The bearing idea of the phase II is sound; to involve people directly in the formulation of goals and measures to improve their local environment and thereby secure their livelihoods. Contrary to Phase I, the proposal states that phase II should not be a “stand alone project approach”, but apply a more holistic approach. It should also have a rather explicit bottom-up approach.

The PD does not tell us much about how the *planning process* has been so far. It is not possible to see to what extent the present rather vaguely suggested field activities have been identified and how stakeholders have been heard. I suggest that an initial participatory process oriented approach is allowed for and that revised plans of operation of activities are made and approved by the parties in an annual meeting for all clusters after 1 year.

A major point relating to the underlying analysis and planning activities is furthermore that the proposed organisational structure may not be optimally designed to cater for the activities, and in particular for the more long-term capacity building of institutions and for the local ownership to the programme focal ideas. I return to this in chapter 4.

Summary; *The overall objectives are well in line with policies of both recipient and donors; with a focus on sustainable development issues. It is unclear to what extent local people actively have been involved in the formulation of present suggested objectives and activities. If people have not been involved, this should be rectified through a more detailed planning phase during the first year.*

3.2 Information needs and knowledge gaps

The PD states (p.6) under sustainability of the project that:” one needs field studies to understand issues of land availability, biodiversity and eco-intervention potentials, develop case studies to enhance the scope outside the project area by creating demonstration plots in respective clusters, arrange consultation workshops and initiate policy and studies”.

The PD refers to some baseline data found in Annex A, where some information is given about the areas. They also state the need for substantial studies, especially in the first year on socio-economic practices, on the “state of the environment” and on other needs. Such needs could for example be better understanding of socio-economic, agronomic, technical, cultural, environmental and ecological systems and interactions between them; issues of tenure rights, communal and private lands, studies of sustainable off-take levels for grazing and forests resources harvested by various stakeholders, studies on policies and laws that affect ecosystem management. A part of the study should also include the development of good, simple criteria and indicators for sustainable forest management. This, together with a participatory approach can help to identify well-founded strategies for the future. Comparative research efforts approaches between the four areas could also be included.

With the scope of this programme, the R&D activities should most likely focus direct information and knowledge needs for the programme to carry out planned activities.

However, if of interest, one could also consider a more conscious generation of a long-term knowledge base, including basic research efforts.

Summary; *There is need for more thorough information from the four areas, and also for securing a baseline insight prior to programme start; both to document changes, monitor progress and assess results. The project should identify a local academic institution (ISEC, University of Bangalore, or others), to arrange a workshop and develop a plan for surveys and more long term formative process research activities. Here relevant national research institutions, as well as possible international research environments could join. The workshop could aim at developing an information strategy concerning programme-related needs:*

- *Information stocktaking; what is the present state of the art in the areas?*
- *In what fields should more studies be undertaken?*
- *What should be the time plans for such studies?*
- *Identification and inclusion of partners in such activities.*

There should be an organised system for compiling data, information and research results available to the public at large within INEP or contracted to a research environment. Such endeavours could primarily be done in co-operation with relevant Norwegian institutions, through the programme, or through IND 040 or other institutional and financial arrangements.

It should furthermore be an explicit aim that relevant information gathered should be well integrated in planning and management activities and also lead to improved management of the biodiversity resources and to the implementation of conducive policies to the extent possible. The results should be made widely available.

3.3 Consistency (goal, objective, outputs, inputs, budget outline)

There is unfortunately no stringent LFA format addressing a linked hierarchy from goals, objectives, outputs, inputs and to a detailed budget outline. That is a problem for an assessment, especially the lack of a detailed budget. The overall goal is to promote sustainable development with an equitable profile. The PD states 5 programme objectives;

Table 1. Programme objectives

The 5 objectives
1. To look at several interacting environmental problems in each area, suggest solutions/action plans to deal with this and implement them in a holistic way
2. Involve local communities and institutions, especially SHG
3. Enhance bio-resource supply to village communities
4. Improve quality of life and ensure provision of alternative livelihood systems
5. Develop and disseminate integrated environmental regeneration measures in different clusters

As we see, this is a mix of objectives at very different hierarchical levels. One has also put together a mix of objectives, measures and instruments, “where only objectives should be”. This should be clarified better through a more carefully designed LFA- process.

In Annexure D, some elements are given on “causes, effects, methods and objectives”. I do not have a first hand knowledge about the four suggested cluster areas. In general, I can say that the PD is outlining key factors typical for causing environmental problems of different types and relevant “methods to solve them”. The “methods” do not contain any suggestions for instrument use; how to actually achieve the methods” or measure suggested to mitigate the various problems addressed.¹

For example; to improve water management practices in Maidan, one suggests the following methods; community based interventions, planned drainage in the village, water harvesting and ground water recharge, water consumption measures”. Who is to do it, why, who gets the costs, which get the benefits? One thus needs a clear-cut distinction between measures and the instruments to be put in place by both the Cluster Committee and the SHGs/NGOs.

The relationship between the **overall development goal** and the more **specific objectives** can be discussed. If we further look at the objectives and down to the activities, some key activity areas are missing for some reason. Of course, environmental concerns are broad based and one must make some selections. In my opinion, the areas for intervention should be finally defined upon participatory interventions with the cluster groups. However, given the list at hand; I would ask why not sewage, water and sanitation, solid waste, diseases, in general all health related environmental issues are left out at present. There are also activities related to general awareness raising and educational activities to be discussed.

Concerning activities or **outputs** in the different areas, the urban cluster will in many ways be quite different from the other clusters. This should have been analysed in more detail in the PD.

Another issue relates more directly to biodiversity conservation issues or outputs. In a local participation context, it is often found that people give priority to local environmental problems with local causes and local effects. Biodiversity or pollution issues of state, national or even global dimensions are often beyond the realm of local awareness or willingness to consider. In this proposal so far, little heed is paid in general to the more classic biodiversity conservation issues. This may be OK, but I believe it should be explicitly argued for.

Given that the activities at present are not so detailed described, it is also difficult to see how one plans to carry out various issues and the question of **inputs** or instruments thus is difficult to comment upon, and to what extent they match with planned outputs.

¹ *A common distinction in policy research is between measures (tiltak) as physical undertakings needed to mitigate or solve a particular problem, whereas an instrument (virkemiddel) is a device that makes actors carry out the desired measures; the government controls instrument; the farmer controls measures.*

TABLE 2 Budget outline, Phase II

Budget item	Budget post	Percentage share
Biodiversity conservation and protection	1 680 000	0
Civil/essential works	26 092 000	7
Demonstration plots/units	24 883 000	7
Devices and materials	36 018 080	10
Eco- farming	86 514 000	23
Eco-innovations	5 200 000	1
Coordination committee	2 400 000	1
Formation of 270 SHGs	270 000	0
Monitoring, evaluations and assessments	4 118 800	1
NGO services	5 735 790	2
Office equipments	3 100 000	1
Process documentations	11 644 002	3
Project formulations	500 000	0
Research activities	14 947 502	4
Revolving funds to SHGs	6 500 000	2
Technical support and consultancies	24 464 550	7
Training, workshops, study tours	19 912 762	5
Vehicles	1 800 000	0
Operational expenses	16 925 002	5
Salaries	9 420 000	3
Secretarial services	4 565 000	1
Maintenance	4 991 508	1
Costs of replicable projects	63 500 000	17
Sum	375 181 996	100

In line with what is stated above; I believe the PD budget should be a preliminary or at least tentative **budget**, with a major revision after one year, when more detailed participatory planning of village level activities have been spelt out. Still, the presented budget reflects some relative priorities to be commented upon:

- Spending less than 1% for biodiversity conservation and protection should be reassessed in line with recommendations from surveys and studies of what is actually present of resources in the areas.
- 37% is suggested for essential works, demonstration plots, devices and materials and eco-farming. Again, without knowing more precisely what it involves in the different areas, the scale of this is difficult to assess. And would this be in line with the clusters and the SHGs own priorities? Especially in the urban case; this seems a bit high?
- Allocations to the SHG and NGOs seem small compared to what they are meant to do, but again, it is difficult to assess, as the budget do not tell in detail what is to be used where. For example; the eco-farming is put up with 23% of the funds; but will they be routed through NGOs, through SHG, through district level extension offices or what?

- The SHG are to be furnished with a revolving fund, which may be fine. Norad has had a policy of being careful about putting money into such funds, but given the types of activities suggested, including micro-finance, it seems warranted, given proper monitoring and accounting systems.
- 4% is suggested for research; by whom we do not know. The content and level of the effort seems rather unclear. In addition, 7% is suggested spent on technical support and consultancies. In comparison, the SHG revolving fund for 270 groups is 2%.
- The replicable projects from Phase I is set up with 17%. As stated earlier, a better clarification and reasoning should be given for these expenditures.

Summary: *PD should be run through a detailed LFA exercise. Especially goals and objectives needs to be revamped. The relationship between measures and instruments should also be clarified. One should, through participatory approaches, consider the inclusion of environment/health related issues, more than outlined at present. It seems sensible to include a Coastal Zone Cluster group. The budget could be revamped; less focus on Phase I, and may be cater for one more cluster, or more activities inside the clusters.*

3.4 Realism (external factors, risk elements)

Risk elements are often thought of being external factors to project, programme and policy implementation. More recent research indicates that the major factors for explaining success/failures are factors internal to the programme or project and these substantially more than external risks.

A main **internal concern** is related to the organisational structure. There are tensions between involved institutions regarding responsibilities and different opinions towards key elements of the programme. There are also substantial political, legislative and land tenure differences that might result in that many programme activities may be difficult to realize and to be given proper support. There are also local conflicts at village levels and in the Panchayats; the grampanchayats, the Taluk Panchayats and the Zilla Panchayats. This issue is discussed further in section 4.2.

The rather complicated institutional set-up of the programme is clearly a critical factor. It will be a challenge to achieve a good working relationship between the Annual meeting, the Secretariat, headed by DEE, the Cluster Coordinator, the cluster coordination groups, and achieving a smooth working relationship between these programme structures and the established district, sub-district and local administrative/bureaucratic and political institutions. In additions are the NGOs, the existing and to be started SHGs and CBOs, having various responsibilities and roles in the area. This risk issue is discussed further in section 4.3.

There are also **external** risk factors:

The role and dependence of external donors or outside funding in the future is clearly a problem if the programme ideas and activities cannot be sustained on their own upon donor withdrawal. It is thus an important risk factor; the level of dependency on an external financing source.

Selecting some and not other clusters may create situations of envy and active sabotage from other actors in the areas; for political, economic and also cultural/ethnic reasons.

Apart from risk reduction; one also now talks about how to “increase opportunities” (utilising positive risk elements), as opposed to “reducing risk”. In that respect, the project; through working with improved agricultural production systems and crops, enhanced market access, improved and expanded water harvesting and irrigation systems etc. points to what must be crucial elements in such a increased opportunity strategy. In this way, the PD is good in its approach.

Summary on risk elements: *The general picture is very positive; the project addresses areas of vital concern for people both in reducing risks and increasing opportunities. However, a major challenge lies in a rather complex institutional structure, which may be an origin of risks for the overall success of the programme.*

3.5 Assessment of indicators used

Under point 11. Expected results, some measurable indicators of programme impact are listed. The PD suggest indicators such as; increase in tree population, increase in fodder availability, increase in groundwater level, increase in availability of water, reduction in distances travelled to fetch water, increase in employment level, decrease in cattle population, increase in milk production, decrease in firewood consumption, reduction in distance travelled to collect firewood, increase in availability of organic manure and increase in the availability of organic pesticides.

As stated before, I recommend that one return to this after a year; when the activities are clearly defined through participatory approaches and agreed upon. Before the activities are more closely defined, it is difficult to give detailed recommendations on the use of indicators. My recommendations are to await the more detailed plans for activity before a system for measurement of impact is set up.

However, I want to make another point in addition. One can make a distinction between the types of indicators suggested above, that can be used to assess scale and extent of particular activities that was to be carried out. Many of the PD factors could be good indicators in a participatory monitoring system.

But, other indicators may be more comprehensively measuring overall objectives, or outputs at a more general level; such as if health conditions improve (less diarrhoea, smallpox, malaria etc. registered in households or in hospitals); if ecosystem properties of communal forests or grazing areas have improved; if the level of cash and total income for households have improved, if school attendance, incidence level of education has improved etc.

As I interpret the project, a major reason for the effort is linked to the democratisation of the society; that the devolution of powers, authority, resources, rights and duties are taken down to lower levels in society. This is in fact an important part of Karnataka’s present political thinking. In this context, one should therefore also consider impact indicators that relate to this. How well is the relationship between actors such as the villagers, SHG, VDC, the political system through the Panchayats at different levels and state authorities at different levels? - And relative to the programme secretariat, the cluster co-ordinator and the cluster coordination groups. The levels of cooperation and conflict, the ability to execute and deliver services etc. should be measured through inventing a system of such indicators.

Summary: *The activities must be clarified prior to a full-fledged development of an indicator system. It should furthermore also encompass the measurement of institutional development and capacity enhancement, as well as measure more complex social and ecological outputs.*

3.6 The project development process

We have up to now discussed project structures. But, focus must also be on process. The PD seems well aware of this and describes the implementation process of the programme in terms of a milestone programme (p.21-22). This milestone overview is basically good.

The *planning process* up to now is rather vaguely described and it is not stated to what extent local people and local bodies of various kinds have been involved at all up to now in identifying goals, outputs and inputs. My suspicion is that it could have been more participatory in terms of defining goals and activities. I however, find the milestone overview well designed and thought through.

Suggestion; *The major input I have is that there should be a one year planning phase, where more elaborate plans are developed by the clusters; and that these Cluster Environmental Plans”(CLEPs) are through some kind of approval system prior to being funded and implemented. These plans must also be integrated with the present planning system.*

By the end phase one has to make a decision on what the SHG are to become as donor withdraws. There should also be a plan for phasing out donor support and transfer of responsibility to local level bodies. In this context, the participatory review suggested after three years in the milestone overview should work in particular with a phasing out strategy.

4. ASSESSMENT OF INSTITUTIONAL ASPECTS

A crucial part of a programme design is its organisational structure; what actors are selected to be involved, and what arenas are to be established where actors meet. The structure also involves the physical limitations of the problems addressed and the selected activities undertaken. Organisational structure further involves distribution of power, resources, authority, rights and duties and how processes for decision-making and for programme progress are structured.

4.1 Institutional and organisational structure of programme

The institutional arrangements and the organisational structure of programme is taken up several places in the project document (in the executive summary p. 5 and p.8, and p.16-21 and in brief it contains the following elements;

The **key partner institutions** will be apart from RNE, the secretary of DEE, the INEP coordinator and secretariat, the cluster coordinators, various NGOs and SHG, the deputy commissioner and his staff and the Chief Executive Officer of the ZPs and elected persons at Taluk and village levels. In addition, there will be resource persons and institutions of various kinds.

The selection of **project sites** seems reasonably well argued for. The report mentions the following criteria;

TABLE 3. CRITERIA FOR SELECTION OF THE CLUSTERS

Criteria for selection of the cluster:
1. Contiguity of villages and accessibility by road
2. Homogeneity and unique characteristics considering proximity to water bodies, mapped on the toposheet, either sides of surface streams, hill area, plain area.
3. Representative nature of the cluster with respect to the Taluka and to the entire southern plain region in Karnataka.
4. The cluster will have several features of environment like water bodies, rural settlements of the poor, common lands or proximity to forest areas etc.
5. A cluster is expected to have activities, which will not overlap, with the activities of ongoing programmes either by Government or by other agencies in the same area.

In a pilot scheme context; one should choose clusters according to some elements of comparison. That it is accessible by road does not seem like an important criteria; rather could remoteness be an interesting criteria in itself. The main reason or criteria now used seems to be that agroclimatic/environmental conditions vary, which may be OK. However, one could discuss the inclusion of a coastal zone area for the sake of contrast and comparison in a pilot effort (It is argued that enough support flow to coastal zones through other donor supports, but that is on other issues than this programme?). Apart from that; some more socio-economic criteria; caste, class, production types, market access etc. could also have been used as criteria for selection of cluster villages.

The **physical activities**; the “basket of activities” must be defined in a participatory way as mentioned earlier and should be cluster specific; and most likely it should also vary between villages inside the cluster as local heterogeneity is there and variation is found at an extreme

micro level. It is also striking that the suggested activities are basically physical measures in the field. A more comprehensive approach or a more daring approach could be work more with for example the defining of rights and duties and organisational structures in resource management activities. This is often more important for sustainable resource use than carrying out physical activities. It means that rights of access to forest areas could be addressed; working with “Resource Use Agreements” with local people towards FD etc. could be highly relevant activities for the project. The PD states a wish to keep the programme “apolitical” which seems like a rather naive approach.

Relative to the issue of physical activities; very often people locally want schools, roads, health; and not the “environmental activities” that the programme holders want to promote. This question must be addressed prior to project start and be resolved.

The main **lines and areas of responsibilities** are outlined in the following table;

TABLE 4. MAIN AGENCIES AND AREAS OF RESPONSIBILITIES

Agency	Roles and responsibilities
Secretary, DEE	Policy formulation and overall supervision and coordination with other departments
INEP coordinator	Coordination and implementation of programme
Cluster coordinator	Effective implementation of projects
NGO	Training, resource support, capacity building
Deputy commissioner (DC)	Provide government support at district level
Chief Executive Officer (CEO)	Provide ZP support at District, Taluka and village level
Self help Groups	Demonstrate People’s support in the area
Resource persons	Provide technical,planning, management, financial support
Institutions	Local institutions; IISc, Banks, KSPCB,ASTRA; fulfill their roles of technical support, training, mobilizing local contribution etc.

The original programme secretariat and its relationship to the DEE and to RNE are quite unproblematic and functions well.

The main questions concerning **division of authority, roles, responsibilities, rights and duties** arise along certain dimensions partly because some items are not clarified or addressed, and partly because in some cases; different points are made to the same relationship in different parts of the presented PD;

- 1) The relationship to the donor is not addressed in the PD. RNE would most likely be a partner in an annual meeting, but the decisions made there and what can be taken by INEP directly should be clarified. This issue is not necessarily problematic, and the present arrangement with an Annual and a Semi-annual meeting may be continued; but it should be stated somewhere in the PD.
- 2) The roles and responsibilities of the political system and the administrative systems at district, taluk and village levels are not clear in the project. This is quite problematic.

The organogramme on p.7 is quite unclear concerning the division of roles, responsibilities and authority. It is stated that funds will be routed directly from the secretariat to the cluster coordinator. On p.7 it is stated that "wherever necessary, technical support or in some cases financial support is required, the CEO of ZP would be requested to provide the same. In order to coordinate between SHG and various Governmental departments, the INEP cluster coordinators *along with ZP* and CEO would *be responsible*". My recommendation is very simply to find ways to clarify this through agreements, MoU or whatever is a common way to delineate lines of powers and authority. It seems certain that a cluster coordinator, will easily be controlled and steered by the powerful politicians and bureaucrats, especially at District levels.

- 3) In the diagram on p. 17, cluster coordination groups are mentioned. The outline in the section 6 on project implementation arrangement is a bit unclear. What are these groups to be; their composition and mandate relative to clusters and to the INEP secretariat and the coordinator. They will hold a key position, most likely, even if their mandate at present is unclear. Are they advisory to INEP, to the cluster coordinator or are they the real decision makers, taken field level actions? One factor in particular; it is suggested to have members from Government bodies, from NGOs, resource persons appointed by INEP. In addition, one plans to invite people from the Panchayat, SHG, cooperatives and banks. I would recommend that one carefully scrutinized this composition. I know too little about the areas; but the most crucial point is that local people must consider the group composition legitimate and proper for the task in question. I think more local people should be members.

I also think these groups, if well designed in members and mandate, could make a very substantial impact for the success of the programme.

- 4) The cluster coordinator is obviously an important person and she/he is seen as multi-talented person, which would require very careful screening. An experience from other similar programmes would be that the selected person should be one that local people trust and respect, such that when he approaches the areas; people will trust and confide in him. He should preferably be stationed out in the village areas.
- 5) The role of SHG is unclear. On page 5, the SHG is stated as a focal point, whereas on p. 8 they are stated to be responsible for "demonstrating people support in the project". In general; if the SHG are to be the backbone of the programme and the main target groups and even the objective of the programme; then using them as a means to reach other aims does not seem warranted. As discussed earlier; if the programme sees local participation as a goal or as a right in itself, one should see the SHG as a cornerstone. This would also imply that much more powers, authorities and funds accrue these directly and not through the coordinators, the NGOs the CBOs etc. The role of SHG is a crucial point in the whole programme and needs clarification.

One also states on p. 20, that "the common guideline that would govern the formation of SHG would be the necessity to keep such SHG under the project apolitical". If this is meant to be a "understatement" about the problem of using Panchayat organisations, it is recommended that this is rather said and discussed openly and not in this "undercover" way.

- 6) What would be the composition of SHG? Who should be allowed to join? It is obvious that if one introduces the SHGs and offer resources, knowledge, competence and position to accrue these groups; many would like to join. And who is to define and control the establishment and membership? As Ostrom pointed out; the “membership card definition“ is crucial for the smooth functioning of a social institution.
- 7) There is no discussion of the link between the Village Panchayats and SHGs. Why not use existing organisations and institutions instead of developing new and competing organisations? One may argue that they would be complimentary and not alternative, but anyone working with local communities, knows about the heterogeneity of such societies and how the selection of actors within a village is crucial and or fatal for the outcome of the venture to be undertaken. Is there a lack of trust in the Panchayat system? Nothing is stated in the document.
- 8) NGOs are mentioned, not by name, but functioning in different contexts and with partly different roles. On p. 18, they are to work with training, resource support and capacity building, whereas on p. 20, one gets the feeling that the main bulk of work in the villages will be done by the NGO? One should thus clarify; what is the role of the cluster coordinator, the SHG and the NGO.
- 9) What are the target groups? There can be a variety of SHGs. women, poor people, low castes, landless etc. One should maybe define a clear aim for such groups; whether it be landless, women, ration cardholders or whatever.

Summary: *The overall structure proposed in the PD is logical and consistent. The institutional structure of the project is complex and with many levels of authority and responsibility and many of the detailed arrangements are not yet addressed or clarified. Activities must also address key issues of rights and duties and relate to important bottlenecks faced by stakeholders in order to secure rights of a control and access to important resources.*

4.2 Assessment of involved partners and agencies

The DEE and the secretariat have worked together since 1997 and have received very good comments in all reviews on their efforts and performance. As this arrangement goes on in the new programme; the overall programme management seems to be in good hands.

The appointment of cluster coordinators and cluster coordination committees seems crucial. It has been commented upon before. One should also have communication between the cluster coordination groups.

To what extent one will get the full cooperation of the authorities and the political system in the project remains to be seen. The proposal assumes this to be no problem. From my desk in Norway, it is difficult to assess, but it seems wise if the Embassy could send someone to the field to look more detailed into this.. In general, DEE is not a strong player at national level in Karnataka relative to powerful ministries. One can wonder especially at the district levels and below; what leverage will DEE and their project have towards the more powerful ministries like agriculture, energy etc.

Given the limited time; I have unfortunately not been able to look closely at reports on experiences with the Panchayat Raj system in Karnataka. As can be seen in Chapter 6, many donors are now working with these in different parts of Karnataka, and some experiences

from Denmark, from Swiss, and from the World Bank must be available. As the present proposal in some sense seems to avoid the direct involvement of the Panchayats and rather prefer to use SHG, CBOs and NGOs, it seems important to understand why the Panchayats are not given a more prominent role.

It is unclear how much formal planning activities will be incorporated in the areas. One will make types of activity plans; and some of the activities will be in areas where line departments already have their procedures and ways to work. The work will also have to be integrated partly in the overall and sector wise regular planning activities at district levels or below; one needs to think through how such action plans; Cluster Environmental Plans can be incorporated with the ordinary planning systems; for land use in particular but also for other issues. This is taken up ad hoc several places in PD, but not spelt out clearly. Such planning activities would force different groups to work together; SHG, Panchayats and District level authorities. Such plans should also be taken through the programme steering system.

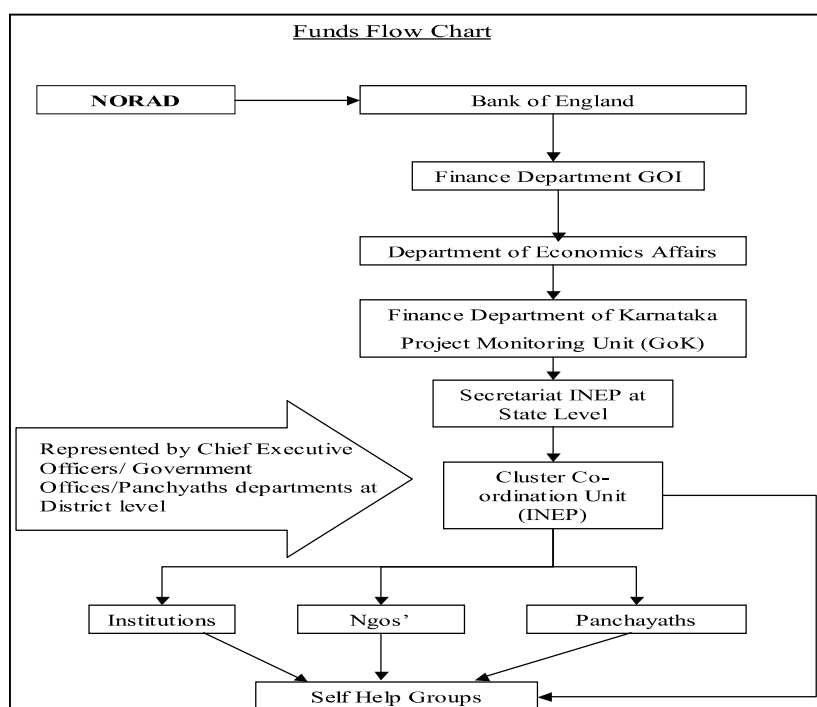
In line with this; can one envisage use of "resource use agreements" regulating in detail issues like available and acceptable levels of exploitation of forest products (like fuel wood, building poles, medicinal plants, crops in plantation forests etc.) in FD and other restricted use areas?

Summary: *The PD avoids using the Panchayat system. This is a problem, and one should look more detailed into the Panchayat system in Karnataka, and experiences so far.*

4.3 Financial management structure and cash flows

Money flow; The funds is planned to flow through the FD, GoI and Dep. Of Economic affairs. It is then routed to the FD in Karnataka, and the PMU. The secretariat will allocate funds to the cluster coordination unit and then the cluster coordinators will make agreement and pass over funds to the different implementing stakeholders; to NGOs, Panchayats, Institutions and SHG. In the diagram in Annexure F, there is also provision for NGOs, Panchayats and Institutions to pass over funds from the projects to SHG.

FIGURE 1. ROUTING OF FUNDS



It requires local knowledge beyond a desk appraisal, but it seems important to assess if routing money through Panchayats and NGOs to SHGs is wise. Should one rather use the direct link from Cluster coordinators to SHG if they are to be the key operators in the project.

It is difficult to analyse the budget and spending per item and allocation to the different stakeholder groups the way the budget has been presented in the PD. I would recommend that if one accepts that a more detailed plan of action is developed after 1 year, that also a more detailed budget spending per item/activity and amounts to different stakeholders is spelt out in separate budget overviews.

4.4 Scope for corruption and measures to counter it, transparency/accountability

Corruption is related to unethical behaviour and may be defined according to the World Bank as "the abuse of public power for private benefit" or "corruption is any transaction between private and public sector actors through which collective goods are illegitimately converted into private-regarding payoffs". In a broader sense, corruption can take place in any system, regardless of if it is private sector, civil society or in the public sector. The issue of corruption is a major concern to the Government of India, and structures have been put in place to fight the problem.

In this project, DEE and the Secretariat is fully responsible for the use of funds and systems are in place for accounting and controls in this respect. The system used at present, has received good comments from all reviews, and this system can most likely be extended to this new phase. Stakeholders must then prepare financial plans, at regular intervals, and see to that accounts etc. are kept in line with the INEP-system.

At a lower level, funds are suggested routed over several tiers; district, taluk and village/village group levels. It seems obvious that the more persons and levels involved, the less open and transparent flows will be and less possibilities for control. NGOs, Panchayats and other institutions do not have a very good reputation in general, and systems must be set in place for frequent controls. There is no doubt that avoiding corruption to large extent will depend on what partners that are involved. I believe an open debate should be held with DEE and the Secretariat about these issues and prior to finally settling for a flow of fund system.

The issue of corruption should be discussed with the stakeholders that will be implementing activities before funds are disbursed. Information on consequences following misappropriation of funds must be clearly given. Levels and frequency of release of funds should be guided by individual plans. Different programme implementers should become the direct recipients and custodians of programme funds.

It is also important that the public at large has good insight in the amount of funds allocated, and for what purposes they are meant to be used in the villages. This can be done through meetings, and by placing out the budgets and accounts in open billboards in public buildings, at the extension offices etc.

Summary; *Corruption and misuse of funds is not discussed at all in the proposal. It is not surprising, but it should be rectified. There is strong government backing on paper to support an explicit and direct attitude to these issues, even if one sometimes get a feeling that it is beyond proper conduct to raise or talk about this issues. I would recommend that one in a*

revised project document set up a list over key risk areas, processes and actor arenas, where in various types of corruption could be found, and how one may detect, reduce and address it.

5. ASSESSMENT OF SUSTAINABILITY

To what extent is it likely that programme activities will be sustained and developed further after donor withdrawal? Many factors impact on the possibility for the activities of the project to sustain over time; such as political support and economic sustainability of programme and field activities, and human rights, socio-cultural issues, gender, environmental, and technical aspects, demography and HIV/AIDS.

5.1 Programme features and long term sustainability

The sustainability relates to two issues; to the sustenance of activities of the programme in itself; and to issues pertaining to the replication of the project in other locations and without substantial external support (the “sustainability of the pilot idea”).

The Phase II programme is mainly intended to be a pilot project with good demonstration properties. It covers a limited number of villages in four districts in Karnataka. As such, it is a pilot scheme. The programme is therefore by itself not designed to solve all similar challenges in the region, and not even to deal with all people in the cluster areas. As assistance is limited relative to the overall needs in the area, a point is made that the programme activities are pilot and demonstration projects, and that other donors, national or local institutions or NGOs/CBOs have to carry out such projects on a larger scale for the future.

However, a main programme idea is to show how a bottom-up approach may yield as a result that key environmental issues are addressed in a demand driven way; and that people can be empowered and made able to voice their needs towards public sector bodies. As such, positive experiences might be replicated elsewhere in the country.

There can be several reasons why pilot projects are never becoming mainstream solutions to particular environmental challenges. Such possible reasons could include

- Lack of interest for political reasons
- Lack of funds (or lack of national priority) for expensive pilot activities
- Lack of capacity for resource demanding pilot schemes
- Lack of competence and knowledge for the complicated pilot activities
- Lack of compatibility with other activities
- Lack of competent institutions for the innovative pilot scheme
- Lack of adequate local institutional anchoring of pilot activities.

In the case of IND 063, the programme has political backing at different levels. However, the proposed activities are most likely too expensive to be replicated with only national fundings in the future. Institutional capacity also needs to be developed, including the ability to integrate actions between national level institutions.

The PD should fully take into account long-term sustainability issues for the local population and the activities to be undertaken.

One weakness in the PD is the lack of clear provisions and plans for how the started activities and processes will be continued when the direct support from Norad is phased out, and when the role of cluster coordinator for the programme is phased out. This relates e.g. to what institutions at local, national or even at regional level will be given responsibility to continue various activities, as well as to which institutions will having the benefit of taking over physical assets that the programme has invested in. The phasing-out of the external support to

the activities after 5 years should be addressed. Long-term sustainability of programme activities as well as in institutional networks and liaison mechanisms are key issues in this context.

Summary: *There is a risk that setting up separate programme institutions that to a large extent are staffed and paid by INEP, will not maximise opportunities for integration and capacity building, as this may isolate the project from national or regional policy development, and it may also inhibit the development of ownership by the managing institutions. This issue must be given serious attention, and one possible way to deal with the problem might be to integrate in the programme's workplan a mechanism whereby more and more of the responsibilities of INEP and the INEP paid cluster coordinators, including financial flow, physical assets and staffing, will be handed over to the involved national, local and even community structures during the lifetime of the programme.*

5.2 Policy support measures

It is clearly stated in the PD that the project has support from all levels of government and from the political systems. There are reasons to believe that the de facto support situation may be a bit more complex than this; and that internal conflicts, powers relationships etc. must be put to rest in some way. One suggestion to secure sustainability of the programme is therefore that the major public stakeholders are coordinated through MoUs or Directive Orders, so that coordination and assistance can flow in a conducive way.

It is essential that efforts are made in the inception phase of the programme to facilitate for the involved institutions at all levels, and maybe particularly at the district and the relevant community levels, to consider the success of the programme as their responsibility.

5.3 Economic and financial aspects - long term sustainability

As the activities suggested will vary between localities and are not yet spelt out clearly in the PD, it is difficult to see to what extent the activities are economically self-sustained over time. It must obviously be an aim in the programme to secure this.

Judging from the activities outlined, many of the activities may become economically self-sustained. Not all. In a replicability context, again some of the activities may become self-sustained. It is hard to tell if line ministries and District level authorities will give priority to activities selected by local people through the clusters. Some of the local management activities depend on the willingness from central and district level authorities to be sustained.

In this context, it will matter what activities the project will allow for. If they have to be clearly environmentally oriented, it may be more difficult to ensure that the activities are sustained than if the activities are more general; health, education/ schools, roads, etc.

Lastly, a programme focus in this context must be that one should develop attitudes and norms among local people to cater for their own future. It is easily so that people tend to wait for government to come and help, and I believe that such attitudes, based on unrealistic assumptions as they are, can be a major constraint for action a for long term sustainability.

The involvement of the political elected actors through the Panchayats may improve their willingness for commitment beyond the donor support period. This may also help improve the often poor relationship between the authorities and local people.

Summary; *It is crucial that the activities are seen by people to be (economically) important, and profitable for them. The governmental actors that may give support in the future should be involved from the onset of the programme.*

5.4 Human rights aspects

The traditional concept of human rights emphasises political and civil rights with freedom of the press, speech, movement and assembly; freedom to organise for individuals and groups, the right to vote and to petition the government; and entitlement to due process of the law and other legal protections. More recent research emphasises fundamental right to basic necessities for an adequate standard of living, including employment, nutrition, shelter, social security, health care and education; all of which are particularly important for the poor.²

Recently, it has also become common to include other rights relating to biodiversity management programmes. Such rights might include rights to control or access natural resources to secure a livelihood. Research indicates that especially poor rural people derive a relatively higher share of their income from communal areas where the rights are often rather unclear.

An important idea in the programme is to empower people to define their own rights and actions through SHG. This has a good human rights perspective. However, one step further could be to define certain areas where the local people through formal “resource use agreements” are entitled access to forest areas, grazing resources, water harvesting and irrigation etc. The project further delivers goods and resources to vulnerable target groups and secures food, shelter, increased social security etc. to very relevant target groups.

The implementation of the activities may improve the often poor relationship between the authorities and local people. Also in this context then, involving the political elected actors through the Panchayats seems to carry merit.

Summary: *The programme should not only work with activities that directly yield incomes and an improved resource base upon which people subsist. One should also work with broader issues of acquisition of rights for people and to empower people to define their own rights and actions.*

5.5 Environmental aspects and sustainability

The project as a whole deals with sustainable resource use and aims at stabilising, restoring and enhancing resource base in a way that creates a basis for sustainable development. But the PD should have better clarified some elements of environmental sustainability;

- Secure the integrity and financial viability of the activities that support maintenance and enhancement of the natural resource base
- Ensure that human use of the natural resources is mediated through forms of collaborative management so that use is sustainable and contribute to livelihood security
- Understand the importance of the environment in economic and financial terms so that environmental values are better appreciated at local, district and national levels

² The World Bank. 1998. Development and Human Rights

- Ensure that this knowledge and information is widely shared to create the necessary awareness and actions
- See to that monitoring of the actual resource use by local communities is carried out

5.6 Socio-cultural aspects, including gender

The PD strongly emphasises commitment to integration of gender and in particular stresses the inclusion of women, both in general and also as particular target groups through SHGs. In a long term context, the activities will only be carried on and by women and securing their involvement or leadership is crucial. Inclusion of men is also fundamental because experience has shown that men often hold the key to social change. It can easily become so that women do most of the work but have little or no say over benefits that are created. Experience has shown that this kind of relationship results in lowered productivity because women have no incentive to invest in work for which they are not compensated.

The PD has a strong participatory approach and the activities defined should then also reflect socio-cultural and economic preferences of people, and separate for the four different cluster groups. This is good.

5.7 Technical and technological aspects

In a sustainability context, it is important that the structures and systems that are developed during the programme can be sustained upon donor withdrawal. Too heavy reliance on cars and transport, IT, good infrastructure, expensive and complex technology in the management or in monitoring, in extension efforts and activities etc. may threaten a long-term sustainability in this context.

That local people themselves defines activities and carry them out, can help support such thinking.

5.8 Impact of HIV/AIDS on programme

The PD makes no reference to HIV/AIDS, and, from this side, I do not have any information about this. The PD should definitely address this issue.

5.9 Local heterogeneity and sustainability

Experience from similar programmes shows the importance of taking into account local heterogeneity. Such heterogeneity not only relates to biodiversity, to wildlife, vegetation and forests, but even more to agro-ecological diversity and to socio-economic and cultural variations within and between villages, districts and regions. Some simple examples relate to the rather big differences in population densities, agro-ecological conditions, ethnic variations, and tenure systems between the areas. If programmes do not sufficiently cater for or allow for local heterogeneity, the programme's long run sustainability may be lowered. If this project really manages to give local people the full capacity to define local activities, thus encompassing local variation, it would be a good step in a positive direction concerning long run sustainability.

6. CONTINUATION OF IND 063 PHASE I ACTIVITIES

Here I address the part of the project that suggests a follow-up phase of IND 063 Phase I.

PD recommends that certain activities in Phase I are given continued support in Phase II. The activities are called; process documentation, concept promotion and concept expansion. They do take up 17% of overall programme funds and as such must be said to be quite scantily described in the PD. This should be rectified.

Table 5. Budget For Replicable Projects Of INEP –I

Project	Total Cost	Grant	Local Contribution
Bioreactors for Clean Coffee Effluents	0.15	0.11	0.05
Iron Ore Waste tailings	0.40	0.28	0.12
Fly Ash Utilization Project	0.25	0.18	0.08
PICO-Hydel projects	0.30	0.21	0.09
Empowerment of Pourakarmikas	0.50	0.35	0.15
Arboretum at Pilikula	1.75	1.23	0.53
Development of Lakes	3.00	2.10	0.90
Total	6.35	4.45	1.91

INR in Crores (1 crore² mill. NOK.)

Most of these projects should have been finalised this year. It is not clear to what extent the project activities have been finalised and to what extent the remaining job is really “process documentation, concept promotion and concept expansion”.

The quoted intention of providing end funding and fine-tuning of concepts and ideas seems sensible. This also goes for documentation, securing sustainability and replication advocacy.

I think that the coffee affluent component needs time for fine-tuning technology is reasonable. The Iron ore has had a lot of time to finalise the work and should be scrutinised carefully before an approval for extension. The same goes for the Fly Ash, that has really taken a lot of time.

The Pico Hydel project is installed in seven locations and I am wondering if the replication then is the most important thing to work with, or if rather developing less expensive models and models with less maintenance needs etc. should be a better priority?

The problems addressed in the arboretum should have been anticipated much sooner. That wild animals eat seedlings and that weeding is necessary should hardly be a surprise to foresters. However, expansion on eco-club activities, educational issues etc. may be good reasons for some extension.

The restoration of lakes takes about 50% of the funds for the extension. In my opinion, enough funds have been spent on the Lakes and there a high awareness of the Lake/tank restoration issue in Karnataka. Restoring more lakes in the same watershed is OK, but there is nothing novel or pilot about it. It is basically replication, that takes a lot of funds. I would recommend that this is taken out and the funds are spent either on other activities of phase I, on an overall documentation of all Phase I activities; or rather; one could consider to include one cluster also from a Coastal Zone Area in Phase II. I return to this.

Summary; *Some of the activities here do not seem very well planned for or at least are not very detailed described in this document. The main focus should be on documentation, demonstration and promotion of replication and not on expansion of the same pilot activities. Especially the lake programme seems to be unnecessary, as the idea now has been grasped by a variety of different actors, including foreign donors, with substantially more funds available than RNE.*

If RNE are to carry out a completion review for Phase I, the team could be asked to go more in detail on what activities under the follow-up of Phase I that should be taken further prior to approving a detailed plan of action for this venture.

7. DONOR CO-ORDINATION

Karnataka receives substantial donor support in areas of development and environment programmes. A list is given in Annex B. The support level there may be in the range of NOK 3 billions.

In the report from 2001; I found the following donor activities;

Table 4. Donor support to environmental programmes in Karnataka, 1999

Donor	Activity	Total sum
WB	Eco- development project also found in Karnataka. Protection of particular forest areas. 7 states Rural water supply, sanitation	5.8 mill USD 28 mill. USD. New phase 140 mill.USD
RNE	Paper and Pulp Industry cleaner production Panchayat programme	6mill.USD 25 mill USD.
DFID	Karnataka Watershed Development project Western Ghats-Agr. and Natural Resource Capacity Building	24 mill. USD 38 mill. USD
Emb. France	Water treatment plant, Bangalore	8 mill. USD
Danida	Watershed Panchayat programme	20 mill.USD
Swiss	Watershed Panchayat programme	8 mill.USD
GEF	Carbon Emission reduction through Biomass Energy for rural Karnataka, India India Eco-development project-conservation of biodiversity (WB)	0.2 mill. USD 20 mill. USD
ADB	Karnataka Urban infrastructure project Karnataka Coastal Environment Urban Development	150 mill. USD (loan) 200 mill. USD (loan)
JBIC	Bangalore Water Supply and Sewerage project Eastern Karnataka Afforestation Project; biodiversity, tree planting, wildlife conservation	281 mill. USD 158 mill. USD
UNDP	Medicine plant sub-programme	0.5 mill. USD
UNIDO	Electronic cleaning programme – Ozone. Several states	1.1 mill. USD

Source; CII 2000

Apart from the governments own programmes and the INEP/NORAD programme; DANIDA, Holland, World Bank, DFID and Swiss government are involved in programmes involving Panchayats. It is recommended that the Embassy discuss the role and functioning of the Panchayat systems with these donors and with the government.

It may not be a large scope for donor coordination, but one could at least discuss and exchange experiences and see to that overlaps are minimized. A particular focus on the role of Panchayats in rural development in Karnataka seems to be important in this context.

8. OVERALL ASSESSMENT, CONCLUSIONS AND RECOMMENDATIONS

8.1 Main principles and conditions for planning and implementation

The new proposal is very different from Phase I and what was described or outlined in the Background Document for a phase II (Vedeld et al, 2001). In the background document, and also in the MoFA strategy for India, more attention were put on institution- building and capacity enhancement of key actors in the environmental government field in Karnataka and with intentions of creating a forum for communication on policy issues in the environmental policy in Karnataka. Pilot schemes were then seen as means to promote dialogue and institution capacity building.

In the new approach now presented by GoK and DEE, a more bottom-up approach is sought developed; where SHG at village levels form the base for identifying and carrying out activities in the field that will stabilize, rehabilitate and enhance the environmental base upon which people depend on for their direct survival and livelihoods. The activities are to be identified by local people, and carried out with the support of the project, of cluster coordinator and groups, and assisted by NGOs, CBOs and district level political and bureaucratic authorities. In many ways, it can be seen as part of a Local Agenda 21, approach, with devolution of powers and activities to local levels. Looking back historically in India, this trend of devolution of powers and resources is positive in terms of local participation and in terms of enhancing legitimacy of policies and resource use.

The PD is found to be well in line with both donor and recipient country policies and there are good reasons to give support to a new phase; based on some preconditions. The appraisal acknowledges that the rationale behind the programme's overall goal, objectives and activities seems well designed.

This appraisal points to certain issues of central concern;

- 1) The organisational structure and division of authority, powers and resources is unclear.
- 2) The role of Panchayat system; the politically elected system, is unclear and needs to be looked further into
- 3) The cluster coordinators and coordination groups hold a key role to success of the programme. The mandate and composition of these is of crucial importance and should be discussed and decided upon at high level
- 4) Local participation may not secure biodiversity conservation issues with national and global dimensions. This is a challenge for any type of local participation approach to environmental management programmes.
- 5) The continuation of Phase I needs improved documentation

The appraisal recommends that the first year of the programme be partly spent on:

- Revising the PD
- Clarify ambitions of the programme, develop an improved LFA format and describing a more detailed work plan for the programme's activities, monitoring and reporting mechanisms
- Simplify the organisational structure, the number of stakeholders and the number of decision-making levels

- Clarify authority lines, tasks duties and responsibilities
- The local level co-operation and management structures should be clarified, and the programme activities must reflect the needs and priorities also of the local people
- The activities should be clarified, both along people’s wishes, but one must also take a decision on what kind of activities that are “allowed”. This is both on physical activities, but also that one allows for securing of rights to access and control over resources. The activities should also relate to health related environmental issues such as water and sanitation, solid waste etc.
- One should consider to include one cluster more; from coastal zone areas.
- The priority of funds and activity level for various programme activities should be explicitly discussed as it will have bearings on stakeholders and organisational structure
- An organisational structure should be put in place for a participatory monitoring of activities
- A set of indicators must be developed that also include more complex objectives such as enhanced institutional competence, the empowerment of vulnerable target groups etc.
- The research agenda should be clarified through a workshop and should ensure that issues relating to the social interaction with the natural ecosystems are fully documented and regularly updated. The programme should aim at identifying direct knowledge needs to carry out planned activities as well as to generate a long-term knowledge basis.

8.2 Financial and technical requirements with anticipated inputs from partners, Norad and other donors

The development of the PD up to present day is not clearly described in the proposal. According to officials at RNE, many efforts have been put into the development of the programme and in particular with defining the activities. I would still recommend that more detailed plans and budgets are developed for the first Annual meeting of Phase II after the development of Cluster Environmental Action Plans.

There are no descriptions of how activities will be financed upon donor withdrawal. This should be addressed in the work plan. The first year planning should fully take into account long-term sustainability issues for the local population and local level bodies.

Norad’s role as external donor should also be clarified during the revision of the PD.

The programme should aim to involve district level bodies much more directly in the programme.

The plans after the first year should address the question of what kind of income-generating activities that should be allowed to be sponsored under the programme. Should people openly define the agendas or should it be confined to “environmentally related income-generating activities”, suggested at present. There is a tension here, and it will not go away. Local people will prioritise major income generation activities, they will want health, schools, education, roads, market access etc. more than “what they perceive as rather marginal environmentally related activities”.

Plans should be considered developed and together with local authorities; like a Cluster Environmental Action Plan.

From Norads point of departure; the “approved” activities must have an environmental reasoning; it will be a bit difficult to argue the use of environmentally earmarked funds for “integrated rural development type” activities. However, as long as poverty reduction is still one goal of the programme, some funds may be spent on health, education and infrastructure, not least to create legitimacy and positive attitudes towards overall programme ideas.

It is recommended that;

- * A relatively smaller share of the budget is spent on Phase I follow-up activities; in particular the lake programme
- * More is spent on Phase II activities in the villages
- * A more detailed budget outline is presented after 1 year, with clearer cost items on who receives funds, and a clearer breakdown along the different activities to be undertaken

8.3 Division of responsibilities between partners, Norad and other donors

This is a weakness of the PD. The division of authority, powers, resources, rights and duties are not clear enough and may cause problems later if not rectified. It is especially the relationship between cluster coordination groups, Panchayats, SHG and NGO/CBOs that is a major concern.

It has been stressed several times in this report, but it can be reiterated that principally speaking; the Panchayats should have been the cornerstone in a project like this because it is the politically elected system at the different levels. The role now assigned for the Panchayat system and also for District level bureaucratic authorities must be clarified in a frank and open way. My recommendation is that RNE must take this further both with the government and also with other donors, and hear their experiences with the Panchayats in Karnataka.

Monitoring and evaluation systems must also be put in place; and it is in particular recommended that time and effort is spent on participatory monitoring systems for water, for grazing and forest areas and for health and sanitation related issues. It is crucial that local people and their bodies are strengthened to take charge of the monitoring, controlling and enhancement activities.

It is also recommended that some provisions for handling of disputes or disagreements be added to the PD.

8.4 Measures to ensure the partner’s administrative capacity, quality assurance, accounting, auditing and reporting

One should plan for a mechanism whereby INEPs and the cluster coordination groups role as responsible for the technical facilitation and the financial flows of the programme step by step is transferred to the involved national institutions represented by local authorities, NGOs and CBOs that actually are implementing the programme’s activities. This might foster a better sense of local responsibility for the programme activities as well as easing the transition phase from a donor-supported scheme to a self-sustaining process.

Clear provisions for reporting frequency and contents, for auditing procedures, and for the ambitions of implementing income-generating activities and poverty alleviation activities at

the local level must be established. The present INEP system is good, but most likely needs some innovation to cater for the new types of activities suggested by the Phase II.

To foster a better sense of ownership, it is recommended that the financial officers of the involved districts are given full accounts of the financial flows and budget plans of the programme throughout its lifetime, so that information from these activities can be reported back.

8.5 Measures to address gender, human rights, and HIV/AIDS issues and corruption

- Regarding gender, the programme has a particular focus on SHG and on targeting women. One should also secure the involvement of men in the process of engendering the entire programme.
- The human rights issue is not mentioned in the PD. It is recommended that such issues are handled both through establishment of legal rights to resource access for vulnerable target groups, especially related to CPRs and to FD lands of various types.
- The PD is explicitly targeting poor people, but it is obviously a challenge to secure that when establishing the SHG, that membership is available for the groups one wants to support.
- The PD should include information about the situation concerning HIV/AIDS in the areas. It is recommended that the programme involves the Ministry of Health during the development of relevant community level activities
- The PD does not explicitly address the problem of corruption. This is problematic. Indirectly, some attention is given, in that certain stakeholders are kept at bay, while others are given priority. It is recommend to develop a separate action plan on how to reduce/minimize misuse of funds and to secure maximum openness, transparency and accountability at different crucial point in project processes and in key project activities where corruption may be anticipated as a problem. The GoK has a clear policy on fighting corruption and the authorities in charge should be possible to use in this programme.
- As a general recommendation, the DEE, the annual meeting and the cluster coordination groups made up of the key partners, must take on the full responsibility for transparency and accountability for programme funding. Funds allocated for all types of activities should be made public for all stakeholders, as is the current practice with grants received from the central government to district administrations.

8.6 Requirements for reviews and evaluations

With the addition of more focused research and monitoring components within the programme, one does not want to recommend other measures for reviews and evaluations than the standard procedures for such schemes referred to in Norad's Development Co-operation Manual. In the PD a review is suggested after 3 years. However, a separate requirement for reviewing the revised PD after the first year period should be considered. It is also suggested that if a completion review for Phase I is carried out, one should also look at the continuation suggestions for Phase I.

APPENDIX 1 – References

1. Kothari, Ashish; Singh, Neena, and Suri, Saloni, eds. *People and protected areas: towards participatory conservation in India*. New Delhi: Sage, 1996. 276 pp. ISBN: 0-8039-9333-1.
2. Vedeld, Paul. *Re: Phase 2 Indo-Norwegian Environmental Programme*. 2001:7.
3. Kumar, Arun. *The black economy in India*. New Delhi: Penguin Books, 1999. 314 pp. ISBN: 0-14-027859-1.
4. Chatterjee, Partha, ed. *State and politics in India*. New Delhi: Oxford, 1997. 576 pp. (Bhargava, Rajeev and Chatterjee, Partha. *Themes in politics*. ISBN: 0-19-564765-3.
5. Farrington, John; Turton, Cathryn, and James, A. J., eds. *Participatory watershed development: challenges for the twenty-first century*. New Delhi: Oxford, 1999. 382 pp. ISBN: 0-19-565544-3.
6. Das, S. K. *Civil service reform & structural adjustment*. New Delhi: Oxford, 1998. 267 pp. ISBN: 0-19-564851-X.
7. Rural Development Sector Unit, South Asia Region. *India: towards rural development & poverty reduction*. World Bank, 1999. Report No.18921-IN. 22 pp. (Volume 1: Summary).
8. Agarwal, Anil; Narain, Sunita, and Sen, Srabani, eds. *The citizens' fifth report. Part II: Statistical database*. New Delhi: Centre for Science and Environment, 1999. 256 pp. (Agarwal, Anil and Narain, Sunita. *State of India's environment*;
9. Utenriksdepartementet; NORAD, and Miljøverndepartementet. *UD Strategi for miljørettet bistand*. Utenriksdepartementet, 1997. 22 pp.
10. Ministry of Environment & Forests, Government of India. *A silent revolution for environmental conservation: one year of achievements*. New Delhi, 1999. 57 pp.
11. Department for International Development (DFID). *India: country strategy paper 1999: DFID, 1999; 20 pp. ISBN: 1-86192-106-3.*
12. Department of Forest, Ecology and Environment, Government of Karnataka, Bangalore. *Environmental*
13. Department for International Development (DFID). *The water and environmental sanitation sector in India: profiles of government and donor programmes*. New Delhi: DFID, 2001. 211 pp.
14. Government of India, Ministry of Environment & Forests. *National conservation strategy and policy statement on environment and development*. New Delhi: Government of India, 1992. 36 pp.
15. Government of Karnataka, Department of Forest, Environment and Ecology (Environment & Ecology). *Annual Report 1997-1998*. Government of Karnataka, 1998. 19 pp.

16. Royal Norwegian Ministry of Foreign Affairs. A changing world: main elements of Norwegian policy towards developing countries. 1996. Report No. 19 to the Storting (1995-96). 48 pp.
17. Confederation of Indian Industry. Draft report. Compendium of donor assisted projects in the environment sector in India. Prepared for the World Bank. 1999.
18. Gupta, Bhabani Sen Prof. India: problems of governance. New Delhi: Konark Publishers PVT LTD; 1996; 428 pp. (Gupta, Bhabani Sen Prof. Governing South Asia; v. 1).
19. Alsop, Ruth; Gilbert, Elon; Farrington, John, and Khandelwal, Rajiv. Coalitions of interests: partnerships for processes of agricultural change. New Delhi: Sage; 2000; 308 pp. ISBN: 0-7619-9423-8.
20. Poffenberger, Mark and McGean, Betsy, eds. Village voices, forest choices: joint forest management in India. New Delhi: Oxford; 1996. 356 pp. ISBN: 0-19-564458-1.
21. Jha, S. N. and Mathur, P. C., eds. Decentralization and local politics. New Delhi: Sage; 1999. 327 pp. (Hasan, Zoya; Mathur, Kuldeep, and Shah, Ghanshyam. Readings in Indian government and politics; v. 2). ISBN: 0-7619-9337-1.
22. Chopra, Kanchan and Gulati, S. C. Migration, common property resources and environmental degradation: interlinkages in India's arid and semi-arid regions. New Delhi: Sage; 2001. 163 pp. ISBN: 0-7619-9501-3.
23. Roy, Kartik C.; Tisdell, Clement A., and Sen, Rajkumar, eds. Economic development and environment: a case study of India. Calcutta: Oxford, 1992. 164 pp. ISBN: 0-19-563431-4.
24. Khator, Renu. Environment, development and politics in India. Lanham: University Press of America, 1991. 246 pp. ISBN: 0-8191-8189-7.
25. Tropp, Håkan. Patronage, politics and pollution. Precarious NGO-state relationships: urban environmental issues in South India. Linköping: Department of Water and Environmental Studies, Linköping University, 1998. 247 pp. ISBN: 91-7219-378-6.
26. NORAD. Environmental mission to India. 1996. Notes: File IND 063
27. Ministry of Environment and Forests, Government of India. Environment action programme, India. Ministry of Environment and Forests, 1992.
28. Jairath, Jasveen Dr. Study on NORAD supported watershed management projects in India's three states namely Himachal Pradesh, Rajasthan and Karnataka. Royal Norwegian Embassy, New Delhi, 2001. 28 pp. Notes: Dr. Jairath, Society for Participatory Development, Hyderabad.
29. Pant, Niranjana, ed. A study of NORAD's water management projects in India. Draft report. Lucknow: Royal Norwegian Embassy, New Delhi, 2001. 58 pp.
30. Gupta, Shreekanth. Country environment review; India. Policy measures for sustainable development. New Delhi: Asian Development Bank, Programmes department (West),

1999. 140 pp. Notes: Discussion paper.
31. Alsop, Ruth J.; Krishna, Anirudh, and Sjoblom, Disa. Inclusion and local elected governments: the Panchayat Raj system in India. South Asia Social Development Unit, 2000.
 32. WCMC. Biodiversity profile of India [Web Page]. 1998. Accessed 1998. Available at: <http://www.wcmc.org.uk/igcmc/main.html>.
 33. Rangan, Haripriya and Lane, Marcus B. Indigenous people and forest management: comparative analysis of institutional approaches in Australia and India. Tylor and Francis, 2001. Notes: Society and Natural Resources.
 34. Government of India, Ministry of Environment and Forests. State of the environment report: India 1999. Government of India, Ministry of Environment and Forests, 1999.
 35. The Royal Norwegian Embassy in New Delhi, India. Direct support to local NGOs in India. Royal Norwegian Embassy, New Delhi, 2001. Royal Norwegian Embassy-India-NGO position paper
 36. United Nations Development Programme. India's development partners. New Delhi: United Nations Development Programme, 2000. 150 pp
 37. Government of Karnataka. Budget 1999-2000: Speech of Sri Siddaramaiah (Deputy Chief Minister and Minister for Finance and Planning). Bangalore: Government Press, 1999. 110 pp.
 38. Shanmugaratnam, N. and others. Indo-Norwegian Environment Programme (INEP) IND 063 in Karnataka and Himachal Pradesh: A Mid-term Review, 61 pp.
 39. Karnataka State-Pollution Control Board. Annual Report 1999-2000: Karnataka State-Pollution Control Board, 2000. 52 p.
 40. Karnataka Forest Department (Wildlife Wing). India Development Project-Nagarahole (Rajiv Gandhi National Park): Karnataka Forest Department (Wildlife Wing), 10 pp.
 41. Ministry of Environment and Forests, Government of India and Kalpavriksh. National Biodiversity Strategy and Action Plan-India: Guidelines and Concept Papers. New Delhi: Ministry of Environment and Forests, Government of India and Kalpavriksh, 2000. 103 pp.
 42. NORAD. NORAD's Good Governance and Anti-Corruption Action Plan 2000-2001: NORAD report 2000/1. Oslo: NORAD, 2000. 40 pp.
 43. Planning, Institutional Finance and Statistics and Science and Technology Department- Government of Karnataka. Ninth Plan 1997-2002. Bangalore: Govt. Press, 544 pp. (v. 1).
 44. Ministry of Environment and Forests-Government of India. GEF Projects in India. New Delhi: Ministry of Environment and Forests-Government of India, 1998. 87 pp.
 45. Gadgil, Madhav & Rao P. R. Seshagiri. Nurturing Biodiversity: An Indian Agenda.

- Ahmedabad: Centre for Environment Education, 1998. 163 pp.
46. Department for International Development-British Government. India: Country Strategy Paper. London: DFID, 1999. 20 pp. ISBN: 1 86192 106 3.
 47. Planning Commission-Government of India. Mid Term Appraisal of Ninth Five Year Plan (1997-2002). New Delhi: Planning Commission-Government of India, 2000. pp. 1-22, 327-366, 451-498. 498pp.
 48. Centre for Science and Environment, Agarwal, Anil & Narain, Sunita (eds.). Dying Wisdom: Rise, Fall and Potential of India's Traditional Water Harvesting Systems. New Delhi: Centre for Science and Environment, 1997. 404 pp.
 49. The Royal Norwegian Embassy in New Delhi, India and Vedeld, P. Direct Support to Local NGOs in India, The Royal Norwegian Embassy in New Delhi, India, 2001. 65 pp.
 50. Jodha, N. S. Life on the Edge: Sustaining Agriculture and Community Resources in Fragile Environments. New Delhi: Oxford University Press, 2001. 327 pp. ISBN: 019 565134 0.
 - 51., Granville. The Indian Constitution: Cornerstone of a Nation. 2nd ed. New Delhi: Oxford University Press, 2000. 390 pp. ISBN: 019 564 9591.
 52. Quigley, Declan. The Interpretation of Caste. 2nd ed. New Delhi: Oxford University Press, 1999. 184 pp. ISBN: 019 565 1715.
 53. Karmakar, K. G. Rural Credit and Self-help Groups: Micro-finance Needs and Concepts in India. New Delhi: Sage Publications, 1999. 374 pp.
 54. Rajiv Gandhi Institute for Contemporary Studies; Gangopadhyay, Shubhashis, and Wadhwa, Wilima. Economic Reforms for the Poor. New Delhi: Konark Publishers Ltd., 2000. 503 pp.
 55. Drèze, Jean; Gazdar, Haris; Sengupta, Sunil and others. Indian Development-Selected Regional Perspectives. 4 ed. Delhi: Oxford University Press, 1999. 420 pp.
 56. Ministry of Environment and Forests-Government of India. Annual Report 2000-2001. New Delhi: Environmental Information System (ENVIS), Ministry of Environment and Forests, 2001. 212 pp.
 57. Tideman, E. M. Watershed Management-Guidelines for Indian Conditions. 6th ed. New Delhi: Omega Scientific Publishers, 2000. 670 pp.
 58. Singh, Katar and Gupta, K. K. The Sadguru Model of Community Based Natural resources Management. Anand: Institute for Rural Management Anand, 1997. 50 pp.
 59. Indo-German Bilateral Project "Watershed Management" and Honore, Guy. Our Land, Ourselves-A practical Guide to Watershed Management in India. New Delhi: Indo-German Bilateral Project
 60. Det Kongelige Utenriksdepartement-NORAD. Godkjenning av Rapporten "Organisering og Bruk av Norsk Miljøkompetanse i Bistanden". Oslo: Det Kongelige

Utenriskdepartement-NORAD, 1998. 15 pp.

61. NORAD. Gjennomgang av Miljøspesifikke Programmer og Prosjekter 1994-1997. Oslo: NORAD, 1999. 18 pp.

62. NORAD. Environmental Mission to India. Oslo: NORAD, 1996. 74 pp.

63. Det Kongelige Utenriksdepartement. Norsk Bistand i Fokus-Utviklingspolitisk Redegjørelse 2000. Rapport om Norsk Utviklingssamarbeid i 1999. Oslo: Det Kongelige Utenriksdepartement.

64. Det Kongelige Utenriksdepartement. Taken for Granted? An Evaluation of Norway's Special Grant for the Environment-Evaluation Report 10/2000. Oslo: Det Kongelige Utenriksdepartement, 2000. 64 p.

65. The Royal Ministry of Foreign Affairs. UD-A Strategy for Environment in Development Cooperation. Oslo: The Royal Ministry of Foreign Affairs, 1997. 20 pp.

66. Garain, S. (1994): Government- NGO Interface in India; An Overview.. *The Indian Journal of Social Work*. Vol.LV, No.3:337-346.

Internet addresses:

Ministry of Environment and Forestry, GoI; www.envfor.nic.in

UNDP/Sustainable Development networking programme, India: <http://sdnp.delhi.nic.in>

<http://www.norad.no/environment> : Webpage for Norwegian environmental competence

<http://www.kar.nic.in> karnataka government info

APPENDIX 2 - List of acronyms

DEAP	District Environment Action Plan
FD	Forest Department
GIS	Geographic Information Systems
HIV	Human Immunodeficiency Virus
INEP	Indo-Norwegian Environmental Programme
IND063	Project code; Indo-Norwegian Environmental Programme
MOU	Memorandum of Understanding
NGO	Non-Governmental Organisation
CLEAP	Cluster Environmental Action Plan
PD	Programme Document
PMU	Project Management Unit
SIDA	Swedish International Development Cooperation Agency
TOR	Terms of Reference

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