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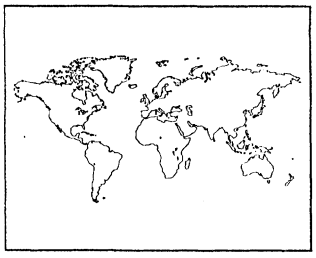

Primary environmental care: an alternative paradigm for development assistance

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I. INTRODUCTION

THIS PAPER DESCRIBES the concept of Primary Environmental Care - a process by which local groups or communities organize themselves with varying degrees of outside support so as to apply their skills and knowledge to the care of natural resources and environment while satisfying livelihood needs.[1] It stresses the linkage between environment and development issues that is currently given so little attention within global environmental debates. The focus is on combining ecological sustainability with meeting the livelihood needs of poorer groups.

Despite decades of positive development effort, the number of people subject to extreme poverty is increasing. Many are now faced with accelerating environmental degradation, coupled with a growing immediate need to utilize natural resources to survive. Their livelihoods are complex, and have to adapt rapidly in response to unpredictable environmental and economic change. Although our knowledge of these complex pressures and interlinkages is extremely limited, we behave as if it was near perfect. This is because development practice has long been dominated both by the philosophy of positivism and the science of reductionism. Technologies known to work under one set of conditions are applied widely, on the assumption that different receiving environments and economies will benefit too. The approach would appear to be successful, particularly where the transfer is of infrastructure. Yet it is logically impossible for such reductionist analysis and positivist thinking to account for the complexities of real world systems. As a result, we are rarely able to predict the effect on a whole system when one part is improved. Impacts are often shortlived and bring unexpected failures. All too often, the only locally persistent element is a heightened sense of dependency on outside support.

Many would argue that development assistance has always pursued the goals of a sustainable development. But if development is to be sustainable, it will have to begin with the people who know most about their own livelihood systems. It will have to value and develop

All references to the Gatekeeper Series and to *RRA Notes* are available from the Sustainable Agriculture Programme, IIED, 3 Endsleigh Street, London WC1H ODD, U.K.

1. DGCS (1990), *Supporting Primary Environmental Care,* report of the PEC workshop, Siena, to OECD/DAC Working Party on Development Assistance and the Environment, Ministero degli Affari Esteri, Direzione Generale per la Cooperatione allo Sviluppo, Italy; Borrini, G. (editor) (1991), *Lessons Learned in Community-Based Environmental Management,* ICHM, Rome; and Pretty, J.N. and R. Sandbrook (1991), *Operationalising Sustainable Development at the Community Level: Primary Environmental Care,* Report to the DAC Working Party on Development Assistance and the Environment.

their knowledge and skills, and put into their hands the means to achieve self-development. This will require a reshaping of all practices and thinking associated with development assistance. In short, it will require the adoption of a new paradigm.

Such a paradigm is embodied in Primary Environmental Care (PEC). This sets out to provide a clear set of conditions and methods required to move the emphasis of assistance both from the large to the small scale and from dependency to self-development. Letting go of old paradigms is profoundly difficult.[2] Fortunately, the basic ideas behind Primary Environmental Care are not new. As noted above, Primary Environmental Care is defined as a process by which local groups or communities organize themselves with varying degrees of outside support. It has three central elements:

- the meeting of basic livelihood needs;
- the protection and optimal use of the environment and natural resources; and
- the empowering of groups and communities for self-development.

There is growing evidence of the conditions for successful local action for sustainable development. This indicates that the benefits of Primary Environmental Care can be considerable. Primary Environmental Care has produced improvements to agricultural yields and natural resource stocks; better health care and family planning; improved access to housing, employment and income-generating activities; and better water, sanitation, and waste disposal services.[3] These benefits extend beyond the life of projects when people's ideas and interests, not just their labour, are sought and fully incorporated.

Such long-term economic and social benefits are closely associated with institutional strengthening and capacity building. Local groups and communities have been willing to contribute their ideas, labour and finances to direct and support development efforts when there is mutual trust and joint action between the external agency and themselves. Given the chance, poor communities hold the key to the solution of their own problems. With the right approach the results are more equitable, more sustainable, more cost effective and better for local and national environments.

II. GUIDELINES FOR ASSISTING PRIMARY ENVIRONMENTAL CARE

PRIMARY ENVIRONMENTAL CARE approaches have been successfully institutionalized in a variety of contexts. These experiences are united by five similarities. The project or programme organization and management is process oriented and, as such, adaptable to changing circumstances; it builds on local systems of knowledge and management; it strengthens local institutions and social organization; it emphasizes using locally available resources and technologies; and it ensures the participation of local people in all stages of planning, management and monitoring. For Primary Environmental Care to succeed, development assistance must adopt all of these components.

a. Process Oriented Projects

The blueprint approach to development planning remains the conventional wisdom. Those implementing projects select the most cost-effective designs for achieving outcomes based upon data derived

2. Kuhn T. (1970), *The Structure of Scientific Revolutions*, The University Press, Chicago, 2nd Edition; and, Bawden R. (1991), "Systems thinking and practice in agriculture", *Journal of Dairy Science* Vol. 74, pages 2362-2373.

3. See reference 1. Also: Hardoy, J.E., S. Cairncross and D. Satterthwaite (editors) (1990), *The Poor Die Young: Housing and Health in Third World Cities*, Earthscan Publications Ltd., London; Leach, G. and R. Mearns (1989), *Beyond the Woodfuel Crisis*, Earthscan Publications Ltd., London; and Conroy, C. and M. Litvinoff (1988), *The Greening of Aid*, Earthscan Publications Ltd., London.

from pilot projects and other studies. Much as a building contractor would follow construction blueprints and schedules, implementing organizations faithfully execute the plan. Once implementation is complete, evaluators may measure actual changes in the target populations (or simply whether initial goals were achieved) and report actual versus planned changes at the end of the project cycle. The blueprints can then be revised before they are reapplied.

However, this approach is inappropriate when planning for management of natural resources, with the attendant complexity of interests, diversity of objectives, and rapid changes in stocks. Our knowledge of these complexities is severely limited, yet this approach assumes that our knowledge is nearly perfect. Moreover, it assumes that development actions produce benefits which will be sustained after project completion, and that temporary organizations will suffice.

For Primary Environmental Care to succeed, projects must centre upon a learning process rather than blueprints.[4] These projects start small and with little cost. Their design is uncomplicated, and they do not try to over-innovate. At the outset, Primary Environmental Care focuses on what the people articulate as their most important priorities. This may mean starting with activities that are not central to project remits, for which funding flexibility from donors is necessary. The best introduced technologies are low risk, easy to learn, tested under local conditions, and offer the prospect of clear, on-site benefits in the coming season or year. A common feature of successful projects has thus been an early period for experimentation and building local capacity. This period of continual dialogue allows outsiders to learn, plan and replan with the local people. The benefits may be considerable (Box 1).

Accepting a period of disequilibrium and adjustment at the beginning of a project does not necessarily mean incurring greater overall costs. Many successful projects have changed priorities and adapted practices following the incorporation of people's needs and priorities. When one agroforestry project, originally intended to teach tree-planting and raising in western Kenya, learnt that a third of farms already had micronurseries, it changed the focus to building on this knowledge and using the skills of these farmers for the benefit of others.[5] Elsewhere in semi-arid Kenya, a project introduced water harvesting techniques for sorghum gardens by using theodolites and other complicated equipment, and offered food for work to persuade local people to participate. The project was a social and technical failure until the design was turned over to the Turkana people, whose modified water harvesting measures now produce reliable crop yields.[6]

After the first phase, Primary Environmental Care projects may stay small as microprojects,[7] or be combined into larger programmes once the participatory procedures and processes have been fully elaborated.[8] They must also be of realistic lengths to allow for real social change and natural resource development. Projects of less than five years duration have a much greater chance of failure than those of five to ten or more years.[9] This is hardly surprising, as local communities have traditionally taken a long-term view of resource use and management. They plan ahead and maintain options for as long as possible. This farsightedness contrasts considerably with the short time horizons frequently adopted by projects and governments.

4. Korten, D. (1980), "The learning process approach", *Development Administration*; and, Bagadion, B.U. and F.F. Korten (1991), "Developing irrigators' organisations; a learning process approach" in Cernea, M. M. (editor), *Putting People First*, Oxford University Press, Oxford 2nd Edition.

5. Chavangi N.A. and A.W. Ngugi (1987), "Innovatory participation in programme design: tree planting for increased fuelwood supply for rural households in Kenya", paper presented to Workshop on Farmers & Agricultural Research, IDS, Sussex; and, Huby, M. (1990), *Where You Can't see the Wood for the Trees*. Kenya Woodfuel Development Programme Series, the Beijer Institute, Stockholm.

6. Critchley, W. (1991), *Looking After Our Land, New Approaches to Soil & Water Conservation in Dryland Africa,* Oxfam and IIED, London.

7. Goethert, R. and N. Hamdi (1988), *Making Microplans: A Community-Based Process in Programming & Development*, IT Publications, London; and, Uphoff, N. (1990), "Paraprojects as new modes of international development assistance", *World Development* Vol. 18, pages 1401-1411.

8. Cernea, M.M. (1987), "Farmer organisations and institution building for sustainable development", *Regional Development Dialogue* Vol. 8, pages 1-24.

9. Hudson, N. (1991), *A Study of the Reasons for Success or Failure of Soil Conservation Projects*, FAO Soils Bulletin 64, Rome; see also Uphoff (1990) in reference 7.

Box 1: Experimental Funding and Local Leaders: Luangwa Integrated Resource Development Project, Zambia

This project is seeking to replace illegal over-exploitation of wildlife with legal sustainable use, and to feed revenues back into the area through a revolving fund. It integrates all government and NGO activities in the area related to land and resource use, and is being maintained because of the high level of political support. Its success is partly due to the willingness of the external donor (the Norwegian government) to invest in preliminary experimental stages.

Since 1986, conservation of wildlife has provided increased local revenues for local communities. The income comes from safari operations and selective culling of wildlife, with quotas set by the project and parks department. Profits are returned to the community in the area, rather than to poachers and outside safari operators. Local leaders, members of parliament, the chairs of local wards and technical staff decide on priorities for the use of revenues. Among the local benefits linked to the project are locally owned and operated lorries for transporting agricultural produce and inputs, a maize-milling factory, bus services to Lusaka (the capital), clinics, bridges, schools, and agricultural services. None of these were available, prior to the project. Local people now value managed wildlife, and ex-poachers are now being hired by the project to protect the wildlife.

Source: *Dalal-Clayton, B. (1988),* ***Wildlife Working for Sustainable Development****, Gatekeeper Series SA9, IIED, London.*

b. Local Systems of Knowledge and Management

In rural and urban areas, livelihood systems are diverse; a single household often relies on a mix of agricultural produce, wild plants and animals, remittances, wage labour and trading. Household decision-making continually adjusts to satisfy new needs and grasps new opportunities arising from the dynamic nature of rural and urban economies. Where there is such great spatial and social diversity, it is impossible at higher levels to predict the needs and preferences of households. There are no prescriptions for designing Primary Environmental Care so it meshes with the diversity of physical and socio-economic circumstances. It has to begin with those who know most detail about local conditions. All too often, the imposition of outside solutions not only fails to build upon indigenous knowledge and techniques, but also obliterates them.

Take soil and water conservation. There are many hundreds of indigenous systems worldwide.[10] Many have been in existence for generations, some for centuries. They are well adapted to local biophysical, socio-economic and cultural conditions. Yet through ignorance, many development projects promote soil and water measures that displace existing technologies. The result is that in virtually all large soil and water conservation projects, the imposed structures

10. Reij, C. (1991), *Indigenous Soil & Water Conservation in Africa,* Gatekeeper SA27, IIED, London; ICRISAT (1991), *Farmers' Practices and Soil and Water Conservation Programs,* ICRISAT, Hyderabad; Chambers, R. (1991), "Farmers' practices, professionals and participation: challenges for soil and water management", paper for Farmers' Practices and Soil and Water Conservation Programs, ICRISAT Center, June 19-21, 1991; Pretty, J.N. and P. Shah (in press), "Beyond intervention: new institutional processes for soil and water conservation and harvesting"; and, UNEP (1983), *Rain and Stormwater Harvesting in Rural Areas,* United Nations Environment Programme, Nairobi.

and measures do not persist. Project planners assume that maintenance will occur, yet local people who are treated only as labourers cannot be expected to have a sense of ownership. In the Sahel, farmers mostly prefer stone lines, yet projects have almost always introduced earth structures. In Yatenga, Burkina Faso, 120,000 hectares of earth bunds constructed with machines at great cost in the 1960s have now all but disappeared.[11] The consequences are serious. If soil and water conservation measures are poorly designed by being not well adapted to local conditions, or deteriorate because of lack of maintenance, then the rate of soil erosion will increase. Bad contour ridging, a common intervention to promote soil conservation, is worse than none at all.

Farmers know a great deal about soils.[12] They have their own classifications and locally adapted management practices. This knowledge should always be a starting point for Primary Environmental Care projects such as in Tamil Nadu, where significant success in individual watersheds has occurred (Box 2).

In the urban setting, the incorporation of the knowledge, resources and capacity of low-income groups has produced a wide range of

11. Reij, C. (1988), "The present state of soil and water conservation in the Sahel", paper for the Club du Sahel, Free University, Amsterdam.

12. Chambers R., L. Thrupp and A. Pacey (1989), *Farmer First: Farmer Innovation and Agricultural Research*, IT Publications, London; and Wilson, K. (1988), "Indigenous conservation in Zimbabwe: soil erosion, land use planning and rural life", paper presented to Panel Session on Conservation and Rural People, African Studies Association of UK Conference, Cambridge, September 1988.

Box 2: Building on Local Knowledge and Skills for Watershed Development: the Approach of SPEECH in Tamil Nadu, India

The NGO SPEECH was established in 1987 and operates in 25 villages. It conducted a planning Participatory Rural Appraisal (PRA) in Paraikulum village in late 1990. The action plan designed by the villagers included gully plugs, gully treatment, fruit trees just inside the *bunds*, field *bunds* and spillways on the boundaries and contour ploughing. The landowners agreed only to plant trees on two sides of each of their fields, so as not to compete with neighbours. A water diviner identified a site for a communal well (0.2 hectare were needed) and other farmers compensated the landowner for the loss of this land. The landless have been involved in working on the gully treatment and the well-digging. There is also an agreement to give them the marketing rights when the trees bear fruit.

In one year, the watershed has undergone a remarkable transformation. It was formerly degraded with a hard crust, and only sparsely covered with a few grasses. But where the protection measures are in place, the yield for the first crop of beans was around one tonne per hectare. The survival rate for the mango, guava, custard apple, cashew and pomegranate tree seedlings is about 80 per cent. The gully will have tamarind on the outside, and napier grass along the inside. The farmers have planned pulses for the first two years, since they are drought resistant, and require no fertilizers. During the second year, they will start applying silt from the tank to the land and further develop compost pits. In the third year, they plan to upgrade the road and build a percolation pond. The ground has been laid for economic benefits to flow to the whole community.

Source: *John Devavaram, personal communication.*

significant benefits. These include the installation of community water and sanitation systems in low-income settlements with all costs recovered; the design and implementation of cheap and effective drainage and garbage collection systems; the design and construction of housing more appropriate for comfort, safety and control of disease vectors; and the acquisition of land for housing.[13]

Projects should start with what people know and what they do well already. Where projects have done this, the economic benefits are remarkable. One study of 68 multilateral projects found those sensitive to local skills and knowledge had an economic rate of return that was double that of insensitive ones.[14]

c. Local Institutions and Social Organizations

To make matters worse, many development efforts have also ignored existing formal and informal institutions. Yet these local organizations are often the key to sustainable resource use and development because they can act to ensure resource management and control responds to the specifics of the local context. They should be strengthened and developed, not ignored. Such groups include traditional leadership structures, water management committees, water users groups, neighbourhood groups, youth and women's groups, housing societies, informal beer-brewing groups, farmer experimentation groups, burial societies, church groups, mothers' groups and grazing management groups.[15]

Effective local groups and organizations rarely comprise whole communities. Primary Environmental Care approaches are most successful when dealing with homogenous groups, in which members have similar interests, values and needs. These different groups have different needs and perceptions which they may not articulate in large assemblies. This diversity of social strata in each locality is a feature of rural and urban communities commonly missed by outsiders. Today's large cooperatives, in which the needs of different members vary enormously and which are too large for widespread participation, are commonly managed by small groups, usually comprising the most wealthy, to whom decision-making has been delegated. Inevitably, they are less effective in meeting the special needs of the poor.

Small group formation or strengthening also mobilizes resource flows. Contrary to expectations, the majority of poor people can save and so provide the basis for access to adequate and timely credit. Groups that encourage members to save, hold money in a common fund, advance small loans for production, consumption and contingency needs, evolve their own rules and regulations, and share leadership responsibility have repeatedly been shown to be highly efficient.[16] They make more loans than larger, non-local institutions, and typically recover more than 95 per cent of loans. Most loans are small, and are for consumption purposes and meeting contingencies. They are critical in breaking the spirals of poverty, as members no longer have to turn to moneylenders for security. Initiatives begun slowly and experimentally have grown rapidly. Thus the MYRADA credit programme in India, the Nepalese Small Farmer Development Programme and the Bangladesh Grameen Bank now service hundreds of thousands of households.[17] In all cases access to credit is not constrained by lack of collateral.

However, the contribution of beneficiary resources should not be

13. See Hardoy, Cairncross and Satterthwaite (1990) in reference 3; IRC (1988), *Community Participation and Women's Involvement in Water Supply and Sanitation Projects,* International Water and Sanitation Centre, The Hague, Netherlands; and, Arlosoroff, S., G. Tscahanneri, D. Grey, W. Journey, A. Karp, O. Langenegger and R. Roche (1987), *Community Water Supply. The Handpump Option,* the World Bank, Washington DC.

14. Kottak, C.P. (1985), "When people don't come first: some sociological lessons from completed projects" in Cernea, M.M. (editor), see reference 4.

15. Cernea, M.M. (1991), "Social actors of participatory afforestation strategies" in Cernea, M. M. (editor), see reference 4; Environment and Urbanization (1990), "Community Based Organizations: how they develop, what they seek and what they achieve", Volume 2, Number 1, IIED, London - especially Murphy, D. "Community organization in Asia", pages 51-60; Jodha, N.S. (1990), *Rural Common Property Resources: A Growing Crisis,* Gatekeeper SA24, IIED, London; and Rahman, M.A. (editor) (1984), *Grassroots Participation and Self-Reliance,* Oxford and IBH Publication Co., New Delhi.

16. *Environment and Urbanization* Vol. 5, No 1 (April 1993) will be on "Funding community level initiatives" and will include case studies of Third World NGOs and other intermediary institutions which have successfully developed such credit programmes.

17. Ramaprasad, V. and V. Ramachandran (1989), *Celebrating Awareness,* MYRADA, Bangalore and Foster Parents Plan International, New Delhi; Fuglesang, A. and D. Chandler, *Participation as Process-What We Can Learn from Grameen Bank, Bangladesh,* NORAD, Norway; and Rahman, (1984), see reference 15.

seen as a direct substitute for governmental (or other, external) resources despite the generally deteriorating financial situation of many countries and communities. Rather, it is a key component of building a local stake and enhancing future multipliers.

Once small homogenous groups have successfully achieved initial goals and confidence has grown, it is common for members to turn their attention to development activities that will benefit themselves as well as the community at large. Successful entrepreneurial group activities include investing in agricultural tools and draught animals for hire to the community, protecting watersheds and reafforestation, organizing community-run wildlife utilization schemes, establishing workshops and small factories, and building housing for tribal families.[18] A study of 25 multilateral projects conducted five to ten years after project completion found the flow of benefits to have risen or remained constant where institutional development had been important.[19] Where it had been ignored, economic rates of return declined markedly and, in some cases, had become negative. Where local ownership is promoted, the returns to local groups can be considerable.

Not all group actions are successful, and not all efforts result in permanent groups. Groups are often more effective in their early years, but as they grow in confidence and become empowered, so the actions taken can bring them into new conflicts. If local groups exist only to benefit from short-term project spin-offs rather than from initiatives under their own control, they are more likely to disband, particularly if they are given no legal entity and stake in the long term.[20]

d. Locally Available Resources and Technologies

Most rural and urban development assistance has been based on the assumption that external resources will be needed. For many poor people and communities this is not a viable option. They can neither command capital nor have access to necessary generators of value, such as machinery, agricultural chemicals, water pumps or building materials. Although there is an obvious role for outside support in securing initial funds, Primary Environmental Care gives preference to local, appropriate technologies by emphasizing the opportunities for intensification of available resource use. Provided that groups or communities are involved in identification of technology needs and of the technologies themselves (the design of testing and experimentation, the adaptation to their own conditions, and the extension to others), then sustainable and cheap solutions can be found.[21]

Resource-poor rural areas that lack infrastructure, are far from roads and markets, and have risky climates and poor soils, typically produce in the order of five times less food per unit area than irrigated and lowland areas near to cities.[22] Yet the potential for intensification of internal resource use without recourse to external input supply is enormous. The development of appropriate agroecological pest, nutrient and water management practices commonly leads to 50-100 per cent increases in the yields of crops, livestock and trees. These increases bring greater self-reliance coupled with reduced dependency on outside suppliers of pesticides, fertilizers and seeds.

In resource-poor urban areas, low-income groups lacking access to high quality, expensive materials must make do with what is available. Yet if they are fully involved in the design, implementation and maintenance phases of projects designed to meet housing, sanita-

18. Hardoy, A. and J.E. Hardoy (1991), "Building community organization: the history of a squatter settlement and its own organizations in Buenos Aires", *Environment and Urbanization* Vol. 3, pages 104-120; D'Souza, E.R. and T.J. Palghadmal (1990), *Sustainable Water-Use System: A Case Study of Sase-Gandhalewadi Lift Irrigation Project,* Social Centre, Ahmednagar, India; Ramaprasad and Ramachandran (1989), see reference 17; and, Rahman (1984), see reference 15.

19. See reference 8.

20. Murphy (1990), see reference 15.

21. Bunch, R. (1990), *Low Input Soil Restoration in Honduras: the Cantarranas Farmer-to-Farmer Extension Programme,* Gatekeeper SA23, IIED, London; Hasan, A. (1990), "Community groups and non-government organizations in the urban field in Pakistan", *Environment and Urbanization* Vol. 2, pages 74-86; Paul, S. (1987), *Community Participation in Development Projects - The World Bank Experience,* World Bank Discussion Paper 6, Washington DC; and, Jintrawet, A., S. Smutkupt, C. Wongsamun, R. Katawetin and V. Kerdsuk (1985), *Extension Activities for Peanuts after Rice in Ban Sum Jan, N.E. Thailand: A Case Study in Farmer-to-Farmer Extension Methodology,* Khon Kaen University, Khon Kaen.

22. Pretty, J.N., I. Guijt, I. Scoones and J. Thompson (1992), "Regenerating agriculture: the agroecology of low-external input and community based development" in Holmberg J. (editor), *Policies for a Small Planet,* Earthscan Publications Ltd., London.

tion, water and garbage collection needs, then the results are more sustainable and effective than those imposed by outside professionals.[23]

e. Local Participation in Planning, Management and Monitoring

In conventional rural and urban development, participation has centred on encouraging local people to sell their labour in return for food, cash or materials. Yet these incentives distort perceptions, create dependencies, and give the misleading impression that local people support the project.[24] This paternalism then undermines sustainability goals and produces results which do not persist once the project ceases. As little effort is made to build local skills, interests and capacity, local people have no stake in maintaining structures or practices when the flow of incentives stops.

An entirely different approach is for support institutions to enter into partnerships with communities for all phases of planning, management and monitoring. Institutions using approaches related to Primary Environmental Care have, through repeated practice, developed a large number of approaches for collaborative research, planning, implementation and monitoring. These comprise a rich and varied menu, and include Participatory Rural Appraisal, Rapid Rural Appraisal, Action Research, *Méthode Accélérée de Recherche Participative*, GRAAP, Farmer Participatory Research and many more.[25] Where the attitudes of outsiders are appropriate and rapport with local people is good, it has repeatedly been shown that the knowledge and skills of villagers rather than of outsiders helps to drive the process of Primary Environmental Care.

The devolution of planning and monitoring phases to villagers and low-income groups is a frontier currently most in need of development. In Primary Environmental Care activities, people in rural and urban communities are not seen as simply informants, but as teachers, extension agents, activists, and monitors of change. These specialists, or paraprofessionals, include village energy workers, villager extension agents, pest control experts, village game wardens and veterinarians.[26] Recognizing that village specialists come from all sectors and classes of the community facilitates the integration of marginalized groups, so allowing their skills and knowledge to influence development priorities. Given the chance, local people are able to monitor changes and articulate local demands for support. These principles also apply to Primary Environmental Care in industrialized countries. In Britain, Planning for Real is an explicit attempt to empower urban people and give them back a lost sense of community (Box 3).

Primary Environmental Care reduces lags in information flows, as feedback occurs during the project cycle. Nonetheless, it is still more common for villagers to be involved in the planning than in the other phases, and there remains a tendency for monitoring and evaluation to be conducted by outside professionals at intermittent intervals. A recent study of the views on participation of some 230 African organizations found that though participation in planning was relatively common, monitoring and evaluation is still largely conducted by outside organizations.[27] Emphasizing the role of local people in determining key indicators of local sustainable development and providing early warning of resource-degrading change is an area

23. Hardoy et al. (1990) see reference 3; IRC (1990) see reference 13; Cabannes, Y. (1988), "Human settlements" in Conroy, C. and M. Litvinoff, (editors), *The Greening of Aid*, Earthscan Publications Ltd., London; and papers in Vol. 2, No. 1 of *Environment and Urbanization*, April 1990.

24. Bunch R. (1991), "People centred agricultural improvement" in Haverkort B. et al (editors), *Joining Farmers' Experiments*, IT Publications, London; Bunch, R. (editor) (1982), *Two Ears of Corn*, World Neighbors, Oklahoma City; and, Reij (1988) see reference 11.

25. *RRA Notes* 1988-1992, Issues 1-14, IIED, London.

26. Huby (1990) see reference 5; The World Bank (1990), *The Aga Khan Rural Support Programme - A Second Interim Evaluation*, Washington, DC; and, Mascarenhas J., P. Shah, S. Joseph, R. Jayakaran, J. Devavaram, V. Ramachandran, A. Fernandez, R. Chambers and J.N. Pretty (1991), "Participatory Rural Appraisal", *RRA Notes* 13, pages 1-143. IIED, London.

27. Guijt, I. (1991), *Perspectives on Participation: Views from Africa*, IIED, London and Forest, Trees and People Programme, Uppsala.

Box 3: Planning for Real: Primary Environmental Care in Urban Britain

In community development there is a need for all views to be taken into account, yet the talkers nearly always win. At public meetings and consultations, local planners sit on a platform, behind a table, maintaining their superiority. When only a few people turn up, and only a few of them speak up, they blame local indifference. Planning for Real attempts to bridge this gap, to identify local needs and resources, and to do it without endless talk.

The focus is a physical model of the neighbourhood. Unlike an architect's model, these should be touched, played with, dropped, changed around. At the first meeting, the neighbourhood model is constructed, using houses and apartment blocks made from card and paper on a polystyrene base. The model then goes into the community, to the launderette, the school foyer, the local shops, so that people see it and learn about the second consultation. At the second meeting, the objective is to find out: "have we got it right?" There is no room for passivity. There is no platform for speakers, not many chairs and the model is in the middle of the room. People spot the landmarks, discuss, identify problems and glimpse solutions. They move around, and can put down pieces of paper with suggested solutions written on them at particular locations. They are permitted to put more than one on the same place - so allowing for conflicts to surface. Often people who put down an idea wait for others to talk first about it. The process permits people to have first, second and third thoughts - they can change their minds. The model allows people to address conflicts without needing to identify themselves. It depersonalizes conflicts and introduces an informality in which consensus is more easily reached.

The professionals also attend. These local planners, engineers, transport officials, police, social workers, wear a badge identifying themselves, but can only talk when they are spoken to. The result is they are drawn in, and begin to like this new role. The "us and them" barriers begin to break down. The priorities put on the model have "disagree" written on the reverse side. Anyone can turn these over, again remaining anonymous. The priorities are assessed as Now, Soon, Later and whether they can be done solely by local people, with the help of outsiders, with some money and advice, or only by outsiders. Obligations are negotiated and made explicit and compromise can be achieved.

The next stage is a local talent survey conducted by local people. The form is pictorial and does not look like a government form. The human resources are documented, and planning can then capitalize on these hitherto hidden resources. Participation in this alternative planning process acts as a demonstration of local capacity, from which larger things can grow.

Source: *Gibson T. (1991), "Planning for Real", RRA Notes 11, IIED, pages 29-30.*

Box 4: Local Indicators of Health in Farmers' Organizations, Sri Lanka

In a self-evaluation of farmer organizations supported by the National Development Foundation, an NGO in Sri Lanka, farmers were encouraged to produce their own indicators which would identify successful or healthy farmer groups. They indicated that groups pass through three phases before they reach full unity, which they visualized in terms of the moon. The full moon signifies fulfilment and achievement of the highest order, and is represented by the indicators hardest to achieve.

Full moon groups **help poorer members with loans from the group fund, eg. for buying the decided variety of seed paddy; help redeem the mortgaged land of members; and have the strength to face external forces.**

Three quarter moon groups **implement common decisions; have common property and use it for the benefit of all members, eg. a sprayer that is rented out to members at lower than market rate. The group takes over a member's share of common work when she or he is unable to do it for some valid reason; and shares benefits among members, eg. watered land for vegetable cultivation, in disregard of ownership.**

Half moon groups **regularly clear and maintain tank *bunds*. They also help others in need, including non-members, by offering their labour and not drawing on the group fund.**

New moon groups **have regular attendance at meetings by more than 90 per cent of members; there is punctuality by all who come; and more than 75 per cent of members participate in common activities.**

Source: *Mallika Semaranayake, personal communication.*

being developed by some Primary Environmental Care initiatives (Box 4).

III. FUTURE NEEDS

AS PRIMARY ENVIRONMENTAL Care projects start small, considerable attention must be paid to replication beyond the active project boundary. The best educators are the rural or urban beneficiaries themselves, and so innovative extension methods promote group demonstrations, visits, workshops and farmer-to-farmer extension to achieve effective multiplication. Project staff can take on the role of bringing interested groups together and facilitating the process of information exchange.[28] This provides crucial leadership experience for villagers and urban dwellers and sets examples for future extension practice.

Although many bilateral and multilateral aid agencies have recently endorsed the basic concept of Primary Environmental Care, it has not yet been found to be the easy option. To achieve replication in large numbers of communities, considerable attention will have to be given to operational policies and frameworks.

28. Mascarenhas et al. (1991), see reference 26; Huby (1990), see reference 5; and, Bunch (1990) and Jintrawel et al. (1985), see reference 21.

a. Training and Education of Project Staff

Primary Environmental Care implies new roles and attitudes for project staff and local people (see Box 5). The idea that educated professionals may have something to learn from the uneducated is for some an awkward notion. The success of many Primary Environmental Care projects has been shown to rest on the attitudes of outsiders.[29] As many outsiders continue to impose their own ideas and have not been trained to acknowledge and elicit the views of poor people or groups, training is essential.

29. Lecomte, B.J. (1986), *Project Aid: Limitations and Alternatives*, Development Centre Studies, OECD, Paris; and, Mascarenhas et al. (1991), see reference 26.

Box 5: New Roles for Outsiders and Local People, and Definition of Participatory Rural Appraisal

Outside professionals **establish rapport; convene, catalyze and facilitate; watch, listen and learn; embrace error; relax; and "use their own best judgement at all times".**
Local people **analyze, discuss and plan; inform and explain; map, model, diagram, quantify, rank and score.**

These changes can be brought about by the adoption of Participatory Rural Appraisal. This is an approach and method for learning about rural life and conditions from, with and by rural people, which is participatory, multidisciplinary, empowering, flexible and inventive. It can also be used in urban areas, although there is much less experience of this.

Sources: RRA Notes *1988-1992, Issues 1-14, IIED, London; Mascarenhas el al. (1991), see reference 28; and Chambers R. (1991), "Participatory rural appraisal", Mimeo, IDS, Sussex.*

Project professionals must learn to work closely with rural and urban dwellers as well as with colleagues from different disciplines or sectors. This will mean emphasizing judgement and communication skills through the use of participatory methods. Where the skills are lacking, the success of Primary Environmental Care may be threatened. In one case in India, the replication of local success was technically satisfactory, but the government departments were much less capable of inducing necessary social change (Box 6).

Training and education in interpersonal skills must also be accompanied by use of new economic, environmental and social assessment tools. Too often benefit-cost ratios and economic rates of return are overestimated at a project's inception, largely because appropriate tools for valuation are not available and because unrealistic growth rates are set.[30] Environmental and social impact analyses commonly fail to anticipate major problems. Professionals also need to be trained in the application of iterative and flexible methods for assessment.

The impact of attitude change on NGOs and government bureaucracies has been significant. Corrupt and unaccountable bureaucrats, narrowly focused specialists, unfocused activists, and top-down planners have been challenged by the adoption of Primary Environmental Care methods in their institutions.[31] It has been shown that such an approach can effectively substitute for shortages in capital, research and technology.[32]

30. See reference 9.

31. Kumar, S. (1991), "Ananthapur experiment in PRA training" in Mascarenhas J. et al. (editors), "Participatory rural appraisal", *RRA Notes* 13, pages 112-117. IIED, London.

32. Hardoy et al. (1990), see reference 3.

Box 6: The Difficulties of Replicating Successful Primary Environmental Care: the Hill Resource Management Programme, Haryana, India

In the Shivalik hills, severely degraded scrub forests and grasslands lose some 150-200 tonnes of eroded soil per hectare per year. The project began in Sukhomajri, where Gujar herders agreed to stop grazing the hills if a dam was built to supply irrigation water. This now famous "social fencing" initiative established water users' associations in four communities during the pilot phase, who managed irrigation water and the cutting of fibres and grasses from the regenerating hills. The impact on agriculture was remarkable: yields up by 100-400 per cent, increased diversification, stall feeding of livestock, and fodder grass yields on the hills up by 400-600 per cent.

For the expansion phase the Haryana Forest Department became the lead agency, building 57 dams in 39 communities. But during this expansion, technology has outpaced attention to social factors. Only in a third of these communities has the department successfully established users' groups. In the long run, the sustainability of the whole effort may be jeopardized as local people become less and less involved in planning and management.

Sources: *Chopra, K., G.K. Kadekodi and M.V. Murthy (1990),* Participatory Development: People and Common Property Resources, *Sage Publications, New Delhi; and Poffenberger, M. (1990),* Joint Management of Forest Lands: Experiences from South Asia, *The Ford Foundation, New Delhi.*

b. Financial Assistance for PEC

Primary Environmental Care does not necessarily imply increased aid flows, but changed ways in which resources are marshalled and deployed. Greater efficiency and effectiveness, better cost-recovery, the ability to delegate responsibility and reduce dependency on expatriate staff, and fewer inappropriate interventions requiring costly repair mean that aid is better spent. Moreover, as communities contribute to Primary Environmental Care efforts, their stake in the future increases.

From the perspective of the donor community, Primary Environmental Care may appear to have some financial disadvantages. It is low-key, so absorptive capacity does not seem high initially. However, Primary Environmental Care projects do require a greater proportion of funding in the early stages, when investment is directed at building human and institutional capacities. Primary Environmental Care may also entail investment in experimental activities and, due to its community level focus, does not primarily stimulate production for export. However, by adopting a national Primary Environmental Care policy, operationalizing it beyond small pockets of success could stimulate production on a larger scale, renewing export opportunities.

Donors can support this process by innovating internal mechanisms to facilitate spending on Primary Environmental Care, and by allowing for more untied assistance and for greater flexible micro-

project funds. This can be enhanced through the development of long-term alliances with NGOs in both the North and the South, such as through joint funding schemes.

Where there is a high level of disaggregation of activities to fund, it is possible that administrative costs may rise to follow increased needs for personnel and time spent on action research for planning and evaluating projects. In the long run these costs will be amply recuperated if the donor's policy shows sufficient coherence and continuity, particularly if these approaches are seen as part of the project preparation process. Furthermore, if parallel spending on infrastructure that supports Primary Environmental Care, such as roads, water development and markets is co-ordinated, initiatives may not have to be disaggregated.

c. Identifying Capacity and Working with Intermediaries

Donors supporting Primary Environmental Care have tended to work through NGOs but not exclusively so. Financial support has mainly been through direct grant assistance for specific activities, but also for core and unrestricted support on some occasions. Donor efficiency is improved and the high level of disaggregation maintained, where intermediate organizations or federations pass resources to the many smaller, more local and flexible organizations.[33]

33. Bebbington, A. (1991) *Farmer Organisations in Ecuador: Contributions to Farmer First Research and Development,* Gatekeeper SA26, IIED, London.

Many donors work with NGOs based in their own countries, which in turn have developed direct partnerships with NGOs in the South. This avoids potential sovereignty problems as local NGOs may be in conflict with national government policies. As supporting NGOs is seen as a tool to achieve better Primary Environmental Care, and not an end in itself, there is a need to develop the means to assess NGOs. Many donors currently find it difficult to assess what makes an effective NGO.

Donors continue to play a significant role in convening regular feedback meetings with NGOs, in making long-term financial arrangements, in promoting South-South cooperation, in networking with government agencies and NGOs, and in granting local NGOs the freedom to select and hire consultants of their choice. Through these efforts, more emphasis can be placed upon institutional development and building in-country capacity to facilitate Primary Environmental Care.

d. The Role of Governments in Replication

Past experiences show that Primary Environmental Care is not exclusive to NGOs. Certain national governments are taking on a crucial role in encouraging the development and spread of Primary Environmental Care action, and will continue to do so. The bulk of human resources, funds and infrastructure are concentrated in government departments and their potential impact on Primary Environmental Care can be considerable (see Box 7).

Governments and donors must play specific roles in providing the basic conditions to encourage Primary Environmental Care to develop and take root in an increasing number of locations, diversity of sectors, and range of institutional contexts. The conditions for success are closely related to legal, institutional and economic enabling frameworks.

Box 7: Local Level Planning by a Government Agency: the Soil and Water Conservation Branch, Ministry of Agriculture, Kenya

In 1974, the National Soil Conservation Programme was established in the Ministry of Agriculture. During the first ten years, emphasis was placed on the construction of mechanical protection works, mainly various forms of terracing. The extension services targeted those individual farmers who were willing and able to accept technical assistance. During the 1980s, it became increasingly apparent that this individual approach to extension was not supporting sufficient soil and water conservation measures. Erosion was outstripping conservation, despite the financial incentives and subsidies.

As a result, in 1987 the Ministry adopted the catchment approach. This concentrates resources and efforts within a specified area for a limited period of time. A team with extension officers from different ministries works together for a week in a catchment area using Participatory Rural Appraisal methods for the catchment planning. They work with local people to analyze local ecological and social conditions, produce inventories of local knowledge and practices, and develop an action plan. This is discussed at an open meeting, or *baraza*, where farmers are able to comment and express their needs. A catchment committee of local people is elected, and this local organization co-ordinates soil and water conservation within the catchment area.

This open approach to local level planning has increased the credibility of extension staff as they are seen to be listening and learning from local people. It does not make use of subsidies. Instead, it has mobilized communities around a productive interest. It has changed attitudes in both local and outside people.

Source: *Soil and Water Conservation Branch, Ministry of Agriculture, Kenya.*

Legal frameworks should focus on the granting of rights, access and security of tenure to farmers, pastoralists and urban dwellers so as to foster responsibility and farsightedness, and the application of appropriate regulations to prevent pollution and resource degrading activities. Where this has happened, such as in Burkina Faso, the potential for replication is enormous (Box 8).

Institutional frameworks should ensure support for community participation and local governance, and match this with national structures and institutions. Services, for example, such as extension departments, research stations, municipal authorities, and health care services, should be oriented so as to be more responsive to local needs. Finally, economic policies should be designed and adjusted to promote Primary Environmental Care. This implies action on distorting subsidies that foster the waste of resources; targeting of subsidies to the poor rather than the wealthy, who are much better at capturing them; the application of charges to those who pollute or damage the environment; and attention to pricing policies that encourage resource-enhancing rather than degrading activities.

Box 8: Government and Village Partnerships: *Programme National de Gestion des Terroirs Villageois* (PNGTV), Burkina Faso

The programme has established the land tenure conditions for widespread action at the local level. It follows the enactment of land tenure reform in 1984, to ensure fair access to land and resources and to encourage greater local involvement in managing and restoring degraded land. The programme is carried out in four stages and now involves about 380 villages, most of whom are in the first two stages. First, a village level committee is established after village discussions and training. The committee works with programme staff to define and demarcate the village boundaries. A resource inventory is then made. The last two stages involve the negotiation and finalizing of a contract between the government and the village committee about the investment level for better productivity and management of village resources.

Problems that still need to be solved include better allocation of formal powers in the village committees and ensuring representation in these committees of all land users, including migrant farmers and herders. In addition, more efficient ways to map, produce resource inventories and plan land improvements must be found as the current procedure still takes too long.

Source: *Toulmin, C. et al. (1992), "Can local resource management provide the answer to sustainable development in the Sahel?" in Holmberg J. (editor),* Policies for a Small Planet, *Earthscan Publications Ltd., London.*

IV. THE PEC PARADIGM

PRIMARY ENVIRONMENTAL CARE integrates natural resource management by building on local skills, local resources, local forms of co-operation, flexible planning and participation. The greatest successes have occurred when the empowerment of local communities was a political priority. The impacts include a reduced dependency on external resources; more efficient use of resources; enhanced economic growth, especially in resource-poor areas; and administrative benefits of increased accountability and effectiveness.

Most important, environmental degradation has been reduced and the skills and capacity of local people increased. One day they will manage Primary Environmental Care alone. They represent the solution. The constraints currently lie with those who would provide development assistance. Whether we can let the old positivist paradigm go will depend in part on whether growing empirical evidence for the impact of Primary Environmental Care will be developed into strategies for its effective implementation on a far larger scale than at present.