

ENV-1

DRAFT

COMBINED REPORT OF REGIONAL WORKSHOPS ON

ENVIRONMENT

1. BACKGROUND  
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The theme of Environment & Development has been considered by NOVIB which needed specific attention both within and with its partners. The ideas and policies on the theme is reflected in documents like Discussion Document on Development & Environment (1991), NOVIB's Three Years Strategic Planning Document: "Working For A Livable World 1992-1995" and the " Annual programme 1992. "

NOVIB - Partner's Country Policy Document For India "Self supporting Development In India, 1991-1995", adopted in April 1991, states that protection of the natural environment will receive high priority and that emphasis will be given to aspects like sustainable agricultural development, ecological regeneration, drought prevention, renewable energy environmental refugees etc.

To prepare a basis for the active involvement of all interested partners on the theme of Environment & Development, a consultation was held in Bangalore (July 1992) which discussed practical implications of the goal of sustainable development. It was decided in this consultation that it is important to identify the needs of NGDOs working in this area and the felt constraints by them. The need for developing NGDO-Specific Long Term Objective and Long Term Perspective on the link between Environment and Development was recognized.

It was decided to organise Four Regional Workshops for initiating the process, as follows :

- North : PIDT in cooperation with the NICO.
- East : PIPAR in cooperation with CYED Service Cell.
- West : Manavlok in cooperation with BCO.
- South : Myrada in cooperation with BCO.

Of these, three regional workshops for North, East and West were organised as follows :

- North : Participants from U.P., Bihar and West Bengal, at Lucknow 21-23 April 1993.
- West : 1. Participants from Maharashtra and Andhra Pradesh at Ambojogai (Distt. Beed) 29-31

July 1993.

2. With the initiative of the BCO and in collaboration with ASTRA, a 3 day workshop on eco-friendly rural shelters was organised in Bangalore in Aug, 1993 which was attended by 25 participants from Karnataka, T.N, A.P, Orissa (summary report is given in the annexure)

East : Participants from Orissa at Prakrutipuram  
(Distt. Dhenkanal ) 18-20 August 1993.

## 2. OBJECTIVES & CONTENTS OF REGIONAL WORKSHOPS: -----

(i) Appraisal and understanding of the specific environmental situations in respective regions and responding activities of NOVIB partners.

(ii) To study the demonstration and training modules used by the partners.

(iii) To assess the need for training, exchange and collaboration between NGDOs which can result in concrete follow-up action plans with integration of environmental concerns and programme activities and strengthen ongoing environment friendly activities.

(iv) To identify the specific needs and constraints.

Special emphasis was proposed to be given on topics of ecological (sustainable) agriculture and Participatory Rural Appraisal (natural resource mapping and designing environmental project activities) .

To facilitate discussions a broad frame work was followed including following points :

- Criteria for recognition of a given situation an environmental problem.
- Principles for management of community resources like common land, pasture, forest land, water resources etc.
- Intervention unit for environmental planning (family/village village cluster/ watershed/ eco region).
- Methodology for measurement of intended ecological impact and unintended ecological implications.

- Emerging conflicts while implementing activities with/within target groups.
- Tried/developed viable alternatives.
- Resource recycling/Energy conservation measures.

3. ACTIVITIES:  
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A. Ongoing Activities  
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a. The organisations in the three regions presented their activities on various environmental issues. These activities have been classified in a few identified broad themes. The activities undertaken under various themes ranges from local action to wide scale lobbying/campaigning. The environmental activities are a part of the ongoing overall programmes of the organisations.

INTERVENTION AREAS ON ENVIRONMENT OF PARTNER ORGANISATIONS :  
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THEME. -----	INTERVENTION POINTS. -----	ACTIVITIES. -----
Afforestation/ Forest Management.	- Protection	- Village Forest-Protection Committees.
	- Promotion	- Forestry Programmes
	- Plantations	- Education/ Campaigning.
	- People's Rights	- NGDO Networking.
	- Forest Policy (Joint Forest Management).	- Decentralised Nurseries. - Need Based Afforestation (fuel, fodder, food). - Conservation of Mangrove Forests. - Indigenous Forest Species - Seed Banks.
Environmental-	- Pollution	- Lobbying/Campaign-

Hazards.

- Eco-Degeneration
  - Mining
  - Developmental Projects.
  - Displacement
  - Environment & Health.
- ning.
  - Legal Measures
  - Workshops/Trainings.
  - Information Collection/Dissemination.
  - Rettle settlement.
  - Health & Safety.
  - Sanitation.

Water Management

- Water Resource-Development.
  - Equitable Water-Sharing.
  - Water Rights.
  - Peoples Participation
  - Floods & Waterlogging.
- Developing/Conserving Local Irrigation /Community - Water Resources.
  - Water Shed Management.
  - Water Lifting Devices.
  - Training.
  - Pani Panchayats.
  - Advocacy/Campaigning Faulty Embankments/canal irrigation .
  - People's Canal.

Sustainable Agriculture.

- Low External Input.
  - Diversity, Complexity
  - Recycling
  - Indigenous Resources  
(water, seeds, livestock, knowledge/practices).
- Biopesticides/- Biofertilizers.
  - Networking.
  - Information/- Documentation.
  - Agro- Forestry, - Nursery.
  - Homestead Gardening.
  - Sericulture, Livestock, Agri-

Campaigns for-  
protection of-  
Eco-Fragile Zone/  
against hazardous  
projects.

- Policy

culture etc.  
Functional Inte-  
gration.  
- Training, Educ-  
ation, Demonstr-  
ation.

- Issues of the-  
Eastern Ghats.  
(CYSD).

- Direct Action

- Protection of  
East Coast(Lok-  
Shakti).

- Campaigns for Public.

- Erosion in Panch-  
dhara Ghat Region  
(YARR).

- Canals in Trans Saryu  
Area.

(GEAG).

- Talchar- Sambalpur Area

(YARR).

Drinking Water.

- Availabilty.

- Earthen Water-  
Filters.

- Quality.

- Community Tube-  
Wells.

- Monitoring.

- Training/Educ-  
ation.

- Quality Analysis

Natural Resource  
Management.

- Traditional Planning  
& Wisdom.

- PRA / RRA.

- Peoples Rights &  
Participation.

- Empowerment.

- Collaboration  
with Government.

- Village Institu-  
tion Building.

- Policy.

- Micro- Macro  
Linkages.

- Tree Patta.

- Regeneration.

Indigenous People - Ethnic Identity  
- Rights  
- Knowledge

- Livelihood.

- Data Collection.

- Fruit & Useful-  
Tree Plantations

- Toilet Forests
  - Organising tribal people.
  - Preserving culture, heritage.
  - Housing.
  - Sanitation/Drinking Water.
  - Slum Development.
  - Industrial/Domestic Pollution.
- Urban Development
- Unplanned Development
  - Industrial/Commercial Pollution.
  - Biased Planning.

b. Linkages of environmental activities with ongoing programmes of NGOs.

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Presentations of Partner/NGOs showed that most of them are directly or indirectly (intentionally or unintentionally) working on various issues of environment, mostly according to and in response to local socio-economic and geo-political situations. Although there are very few organisations who are working solely on issues of environment, environmental issues are integrated with the overall programme of most of NGOs with varying degree of impact.

In activities like agriculture, watershed management, education, awareness, forest management etc. environment and ecological principles are more closely and directly related.

Although recognition of environment as a basic condition to improve material/non-material development and that target groups (under privileged) suffer from environmental degradation is growing in the ongoing programmes of partner organisations, there seems a visible dilemma on a practical definition of sustainable development. An inherent continuous process of analysis of inter-dependence and inter-relationships between various activities of organisation was reflected to be lacking in the light of environment (in its holistic concept) and, therefore, micro-macro linkages become less effectively operational. If various developmental activities of an organisation are envisaged as an interlinked and interdependent process (complimenting each other) with due consideration to the local environmental situation (and implication on a macro environment), the efforts can be more productive, efficient and outcomes of programmes more sustainable.

For a larger goal of environmental conservation/regeneration vis-a-vis sustainable development, efforts will have to be made to understand social and ecological dynamics of micro ecosystems and plan and implement developmental projects which are in harmony with the inherent dynamics of such ecosystems.

c. Intended /Unintended Impact.

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It was expressed by most of the Partner NGOs that ecosystem specific activities like watershed development, afforestation resource management etc. have showed direct beneficial impact in the project areas at action and promotional level.

However, the degree of impact varies and depends on the local conditions e.g. watershed exercises were found more feasible in Maharashtra where the ratio of landed and landless population is 30 : 10, whereas in Orissa where this ratio is 40 : 60, it was not very effective.

In large scale eco-regeneration activities (e.g. social forestry), common lands (used by landless and small farmers) have become inaccessible to people depending on it.

There were discussions to assess the implications of programmes like forestry, agriculture, health & sanitation, forest based rural industry, live stock etc. on the condition of women.

Due to social bias woman's active participation in planning is usually lacking but the adopted changes have usually shown to increase the workload of women.

For example in eco-regeneration activities like forestry women's role in planning (selection of species etc.) and decision making (only for small produce like leaf, fodder etc.) is marginalized and inspite of their main role in nursery development, seedling plantation etc. the sharing of major products (wood etc.) requires community decisions dominated by males. In these situations, because of "job labelling" women have to do extra work with benefits reaching to family and not to women.

In most of the cases it was observed that during process of regeneration, women have to work more and they are benefitted only once the process of regeneration is achieved ( even then without monetary access.)

In the same way in conventional agriculture, the skilled women labour are becoming unskilled as the technology of green revolution has been restricted to men. The market has also shifted out of women's hand and the brunt of male migration has to be borne by women. The labour intensive ecological agriculture, although generates labour for landless women but the activities like goaterly, composting kitchen garden etc. increase their work load to a great extent.

#### d. Dilemmas

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There emerged some dilemmas towards achieving a larger goal of environment and development, e.g. :

- In sustainable development efforts, priority should be given to economic development or resources development/conservation.
- How to cope with the cash demand in sustainable agriculture.
- Priority to local interest or larger environmental interest in a situation of conflict.

#### 4. IDENTIFIED ENVIRONMENTAL ISSUES.

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The emerged environmental issues relevant to the three different regions and the sub-issues (being or) to be addressed are being presented here, as follows :

North :

##### ----- Ecological Degradation :

- Deforestation at a large scale and monoculture in areas like Himalayas has disrupted ecology, adversely, affecting the 'weakers' dependent on forests.
- Diminishing natural resources, mining, alterations in ground water table, occupational health problems, male migration have economic and social implications on women.
- Excessive use of agro-chemicals mining, deforestation and other green - revolution activities (canal irrigation, HYV, technology etc.) have degraded soil.
- Un-and ill planned industrialisation has caused large scale pollution.
- Erosion siltation, raising of ocean changing temperature and rainfall pattern, extinction of flora & fauna, diseases etc. are the resulting climatic and geophysical changes.

- Lack of political will, vested interests ignorance of common public, lack of skills and knowledge of alternatives, materialistic attitude are the main reasons deterring regeneration activities.

- Ecological regeneration (renewable energy, land reforms, rehabilitation of displaced etc.)

#### Urban Environment.

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- Unplanned Development : Haphazard land use, poor infra structures (water supply, sanitation, solid waste management housing, health, education), lack of awareness and indiscriminate exploitation of natural resources.

- Biased planning: No planning perspective and insufficient provision for urban poor, large scale marginalization and eviction of poor, large scale migratory inflows.

- Industrial and commercial pollution : Noise, water, air pollution and occupational health hazards.

- Possible action :

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- \* Advisory
- \* Direct action
- \* Atmosphere building and pressure groups.

South/West :

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#### Water Management

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- Philosophically, equal distribution/sharing of water is an equal opportunity of livelihood and can be approached towards equal distribution of resources.

- Community programmes like 'Pani Panchayat' are able to reduce upper handness of a few and community takes management responsibility and so accessibility and availability to everybody becomes feasible (People's Rights).

- Social management of ground water for judicious use of water.

- Watershed development programmes show great degree of success specially in areas where ratio of landed/landless is narrow.

- Attitudinal awareness and structural obstacles to be dealt seriously in efforts like equal distribution of water to minimize possibilities of 'arm twisting'.

- Water management should be looked with land management (more tangible) and consciousness/awareness should supersede legislation (the problem of quality and location not applicable in case of water).

#### Organic Farming :

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- To be seen differently from traditional and conventional agriculture at conceptual level.

- NADEP model composting, sprinkler/drip irrigation, having provisions of government subsidy, can be helpful. High cost (punishment cost ?) has to be paid.

- Organic farm models can demonstrate and remove apprehensions of reduced production during transition (conventional -> organic) period.

#### East

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#### Forests

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- Rights of people on village forests and participatory forest protection.-

- Tree patta - strengthening involvement.

- Balance between reserved forest, community forest and other land.

- Commercial Plantation/Monocultures/ Indigenous.

- Agro forestry.

- Mangrove forests conservation.

- Joint Forest Management (Govt.Policy)- Positive (Pro people. equal distribution, horticulture) and negative (controlling power in hands of forest dept., inadequate role of NGOs, minor forest produce not sufficient for subsistence) aspects.

### Water Resource.

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- Functional integration of landed and landless.
- Watershed harvesting model/labbying/change in policies (e.g. subsidy on wells not available in watershed regions).
- Integration of traditional water lifting with locally relevant technologies.
- Water harvesting - scope and opportunities.
- People's canal - case example of community management.
- Technological and Policy Level Interventions neglected - only action and promotional levels addressed.

### Indigenous People.

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- Highlighting close affinity with forests and protective culture.
- Integration : ethnical identity and economic livelihood /development.
- Forest Polices/Laws.
- Community laws v.s. institutional laws.
- Knowledge and practices (e.g. health)
- Need to organise tribals, information in tribal languages.

### Common Issues (North, East, West/South).

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### Sustainable Agriculture.

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- A holistic concept /approach (to be looked as a part of sustainable development).
- Potential of Nature.
- Ecology & Economics.
- Sustenance/cash needs/market/ Sustainability.

- Workload on women (and men).
- Trade relations
- Land ownerships (Large)
- Landed/Landless integration
- Locally relevant appropriate alternatives (energy, technology, HYV etc.) Proven technologies.
- Micro- macro perspectives (linkages)
- Govt. Policy/Lobbying/Advocacy.
- Networking /exchange of information, skill, seeds etc.

#### ● Women & Environment

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- Vulnerability to eco-degradation.
- Defacto access to property rights (legal)
- Access to technology, information, knowledge training.
- Initial catalytic opportunities.
- Social diversity/Biological diversity : Gender problems.
- Increasing work load.
- Nurturer (without right) : Complicated role.

#### ● Mapping/Designing Environmental Projects

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- PRA/RRA - Sustainability analysis.
- Scope and limitations of PRRA.

5. CONSTRAINTS & NEEDS.

The constraints and felt needs of various organizations for achieving the objectives of environmental conservation and sustainable development were compiled according to various environmental issues, as follows :-

FELT CONSTRAINTS & NEEDS

ISSUE.	CONSTRAINTS.	NEEDS.
Ecological Degradation/ Regeneration.	<ul style="list-style-type: none"> <li>- Centralised/Uniform Planning For Development/Eco-Regeneration.</li> <li>- Lack of Political will/vested interests</li> <li>- People's ignorance.</li> <li>- Lack of information/alternatives. (Resource / Skills).</li> </ul>	<ul style="list-style-type: none"> <li>- District - Environmental Action Plans/Process of Decentralisation in - planning &amp; implementation.</li> <li>- Lobbying/Pressure Groups/Networking.</li> <li>- Education/Awareness/Training.</li> <li>- Collaboration NGDOs, Resource Institutions.</li> </ul>
Urban Environment	<ul style="list-style-type: none"> <li>- Unplanned Development</li> <li>- Biased Planning</li> <li>- Industrial/Commercial Pollution.</li> </ul>	<ul style="list-style-type: none"> <li>- Identification &amp; Data-Collection.</li> <li>- Lobbying, - Campaigning-Awareness.</li> <li>- Basic Services for - deprives.</li> </ul>

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|------------------|---|---|
|                  |   | - Orientation/<br>(community or-<br>ganisers)/-<br>Training.            |
|                  |   | - Appropriaate<br>Technology.   |
|                  |   | - Pressure -<br>Action Gro-<br>ups.<br>(Networking)                     |
| Water Management | - Unequal Opportunities                                     | - Equitable-<br>Water Sharing   |
|                  | - Unjudicious Use   | -Social Manag-<br>ement of Water<br>(surface/ground)                    |
|                  | - People's Rights   | -Attitudinal<br>Awareness/-<br>Lobbying.                                |
|                  | - Policies/Structural<br>Obstacles.                         | - People's inv-<br>olvement (from<br>planning to<br>execution ).        |
|                  | - Locally irrelevant<br>Planning.                           | - Encouraging -<br>Peoples local<br><br>initiatives/-<br>Public Support |
| Organic Farming  | - Reduced Production<br>(apprehensions)                     | - Demonstration<br>Models.  |
|                  | - Scientific Knowhow  | - Proper Train-<br>ing.   |
|                  | - High Cost Of Additi-<br>onalities.<br>(Punishment Cost ?) | - Field Labora-<br>tories (soil-<br>analysis).                          |
|                  |   | - Subsidies/Govt<br>Schemes.  |
|                  |   | - Sharing of Exp-<br>eriences.  |

Foresters

- Demand of usufructs powerful in villages.
- Strengthening-village forest committees, community management.
- Conflicting Laws (- institutional community)/committees.
- Advocacy/Campaigning/collaboration of Government).
- People's Rights (Apprehensions).
- Tree Patta.
- Commercial Plantations/ Mono Culture.
- Seed Banks (local/traditional species).
- Networking(Issues, Resource).
- Inter Priority Variations.
- Training.
- Trained Personnel (Evaluation, Impact).

Indigenous People

- Dilution of Cultural Identity.
- NGOs supportive role.
- Rights on land/forest Produce.
- Identity & Rights.
- Disorganised/Marginalisation.
- Awareness/Education(in tribal languages)
- Livelihood Needs.
- Lobbying/Policies.

Sustainable Agriculture

- Proven Economics/Successful models(lack of)

- Demonstrative Models.

- Field Laboratories/On Farm Research/ Documentation.

- Scientific BackUp for Traditional Methods.

- Lobbying/Advocacy/Campaigning.

- Labour Intensive.

-Appropriate Market(Processing/finishing of Agricultural Products).

-Apprehensions (reducing yield)

- Government Policies

- Training

- Market

-Micro-Macro Linkages(NGDO - Context).

- Networking (information skills, resources, experiences).

Women & Environment

- Increasing Workload

- Lobbying/Advocacy.

- Property Rights.

- Training.

- Access to Technology

- Attitudinal - changes in society.

- Shifting Market Economy.

- Active Participation (at every stage).

- Job labelling/Social Structure Biases.

General (organisational)

- Skilled/Technical Personnel  
-Long Term Commitment

- Planning & training at community level.

- Information Need.
- Cooperation/Collaboration with Government.
- Finance Constraints
- Marketing of Products
- Govt./ Policies/Structural.
- Group Oriented/Team Approach
- Demonstration Model.
- Appropriate Technology.
- Finances
- Staff Orientation.
- Capability-Building.
- Flow of Information.
- Networking (issue based & programmatic)
- Communication (NGDOs, Resource Persons).

PRA/RRA Exercises to be used as Instruments for Natural Resource Mapping, Designing Environmental Projects, Sustainability/Impact Analysis at Micro Level etc. and to cater to the needs of NGDOS, & Resource/Training Centres to be developed/strengthened.

## 6. FOLLOW-UP ACTION PLAN.

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### Water Management.

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1. Equitable water sharing to be the base of larger goal of equitable livelihood opportunity and community management of resources (pani panchayat) in practical terms.
2. Lobbying/campaigning against anti environment (and hence anti people) policies.
3. Watershed management (concept & technology) and other locally relevant, time tested, environmental friendly (appropriate) technology promotion and development.
4. Demonstration/research models to be followed by education/campaigning.

5. Income generation, employment of landless, rights of deprived to be linked with objectives of water management.

#### Sustainable Agriculture.

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1. Sharing of experiences/informations on traditional practices based on ecological principles (regional language).
2. Seed banks (traditional/indigenous) crop/tree varieties.
3. Practices like mixed cropping, composting, green manuring biopesticides agro-forestry night soil/biogas, use of slit to be introduced with area specific activities (water conservation, water harvesting etc.) and integration with activities like sericulture, livestock, mushroom cultivation, pisciculture etc.
4. Regional Networking (issue, resource, information) of organisations and resource institutions experts on ecological agriculture (e.g. Orissa : All ex-AME participants to develop a core group to link-up with other NOVIB partners ; North India : 'Vasundhara' newsletter to network knowledge, information ; South/West : NOVIB-Non NOVIB partners to collaborate ).
5. Establishment of field laboratories for research/monitoring on issue like biopesticides, biological control, green manure, soil fertility etc.

#### Forests & Tribals.

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1. Lobbying for land rights and facilitating cultivation on adjoining areas of reserved forests, more power to people in implementation of Joint forest management laws etc.
2. Tribal Exchange Programme (adjacent districts) and get together to be organised .
3. Information/Literature to be brought out on various legal provisions meant for tribals (Institutions: scope & purposes).

Environmental Pollution and Energy & Environment are the issues recognised to be addressed at a high priority. Workshops on these issues can be helpful in identifying the problems and initiating the follow up activities according to local situations and partner NGOs.

GENERAL  
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1. Inventories to be prepared in each region about expertise/resources/training various organisations can offer to others.

2. Regional Resource/Information Centres on Environment & Development to be developed to cater the need of data and informations on allied issues. Linkages with academic institutions to be established/strengthened.

3. Integration of interests of landless people, indigenous knowledge and participatory approach in future planning.

4. Each partner organisation to prepare an Impact assessment report (with methodology, strategy, contents etc.) to be shared by others (Orissa Region).

5. Networking: Issue based, programmatic and resource based.  
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6. PRA/RRA techniques to be effectively used in planning, implementation and evaluation of environment & development activities (Sustainability analysis - a concept in this direction). Training of partner/non partner organisations on the subject.

7. NOVIB & non-NOVIB partners group collaborations on specific regional issues (South/West region).

8. Documentation of traditional knowledge.

9. To acquaint and understand the dynamics (and support) of the movement/campaign on specific environment issues (e.g. Chilka) exchange be initiated between NOVIB partners and movement leaders (Orissa Region).

10 Women's active participation/involvement to be sought in all the activities/initiatives.

ENV-2

NGOs and Environmentalism:

"Asking the People, Asking the Earth"

NGOs and Environmentalism: At the Foundations of "Spaceship-----

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Earth"  
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"In the middle of the 20th century ", begins the Brundtland Report, "we saw our planet from space for the first time." (See Our Common Future: World Commission on Environment and Development, Oxford University Press, 1987, p.3). This image of "spaceship earth", however, has become not so much one of bright confidence in the powers of humanity's technology to carry us to the heart of the universe, but of a frail, beautiful globe menaced by uncontrollable and often human-induced destruction. We are now forced to talk about "sustainable development," a new, almost inescapable, globally salient concept which is officially defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Report, page.8). The significance of this is that "we" as some kind of construct of humanity's collective consciousness are admitting both that we have the responsibility to future generations and that the awesome possibility exists that what we are doing now may destroy the existence of these generation. Never before in human history did people have to think in this way.

Developmental NGOs work among the poor of India whose lives are so immersed in dust, dirt and heat, in the most immediate assaults of the earth's irrevocable processes, that it would seem even the concept of a "spaceship" is unimaginably beyond them. Yet they are also a part of this new consciousness. "Asking the Earth" can very easily become the title of a popular book expressing the aspirations of an Indian environmental movement.

A decade ago most NGOs (like most social movements, most government, most individual citizens) had no concern for

"environmentalism". They were doing conventional development work: digging tubewells, giving loans for fertilizers and other agricultural inputs, running children's nutritional programmes, organising rehabilitation, even helping agricultural laborers organize themselves to demand higher wages and work. Now there is new awareness of problems: will there be water to fill the tubewells? will fertilizers themselves sap the life-giving vitality of the soil? is the food we feed our children, and our selves, free from poisonous chemicals? was the dam or other project which caused human displacement necessary at all? was it not possibly even harmful to the human development of the poor? Concrete experiences with drought, displacement, deforestation and other destructive aspects of the developmental experiences have been the solid material foundations within which the internationally pervasive images of an endangered earth have gained meaning. Out of both have grown the concerns for evolving a policy on "environment in development."

All section of Indian society, not only NGOs, have been coming to this new consciousness. But there are perhaps three major sections of "Actors" on the scene:

- (1) the Government of India and its officials;
- (2) the "environmental movement" in India as a whole;
- (3) other mass movements or political parties working in the neighbourhood or region where the NBO is functioning (including organizations of the farmers movement, dalit and anti-caste movements, women's movements and the various existing political parties).

These provide what might be called the "political environment" within which NGOs work. Their perceptions of the environment-in-development problem may help to affect the understanding of NGOs, it may aid their work or serve as an obstacle to it in various ways. Therefore it is necessary, in working out a policy position on environmental issues, to begin with an understanding of their positions.

## The NGOs and Environment: Different Types

It is not a simple matter to discuss the position of all of these sections (NGOs, Government of India, environment movement) on the issues of environment and development, because there is no single position of any of these. Rather, each contains many trends, many understanding, many perceptions. Today there are all kinds of environmentalists, and people may refer to themselves or others as "Crusading Gandhian" environmentalists, ecological Marxists, "green capitalists," ecofeminists, feminist ecologists and so on. Many others who may be reluctant to call themselves environmentalists for one reason or another are also active in searching for sustainable development and are engaged in the debate over environmental movement issues: these include many in nonpolitical mass organizations of farmers, dalits, and adivasis as well as those connected with traditional left parties.

The labels that people themselves use to describe their positions on "environment and development" may sound abstract and confusing to anyone trying to make sense out of the medly of positions. To get an idea from the ground up of what are the variety of environmentalist perspectives among NGOs themselves, let us take some (partly hypothetical) case studies.

NGO A is working among the rural poor, including both dalits and farmers, in several villages in Karnataka. They began with programmes for nutrition and children's education as well as some development work, but in recent years they have been focusing on trying to build a sustainable agriculture. They have had consciousness-raising programmes using women troupes wandering through the villages during the three month period when agricultural work is over; they have organized the villagers themselves to fight for the reconstruction of traditional water systems; they have promoted the planting of a wide varieties of traditional trees and vegetables. What guides their actions is a

belief in the viability of traditional agriculture and the traditional ways of life of the people. Taking the restoration of traditional water systems as a central form of action on environmental issues, they argue for a subsistence economy, believing that with the revitalisation of these irrigation systems they can sustain ground water, fodder for livestock, and two crops a year; out of this will come drinking water, food security, nutrition (and with it health), and materials for housing as well as the basis for a healthy cultural life.

They believe that the main threat to sustainability comes from a "wrong value system" linked to commercialisation. Commercialisation of life (e.g. the desire to have consumer goods such as TVs) is linked to commercialisation of agriculture, which has brought with it dependence on inorganic fertilisers and pesticides, ignorance about the soil, the gradual disappearance of bullocks and carts, and a heavy loan-based economy leading to intensive cash cultivation and monocropping. At the same time an unsuitable education system caught in the "stranglehold of western technological education" has alienated village folk from the land, and a "greed is need" philosophy has developed.

They emphasize learning from and maintaining the traditions of the people; they do not however stress any important caste or class differences in these traditions or try to have a specific "target group" in current activities. (They work with all castes and economic groups in their villages, and different programmes may involve different sections). In regard to caste tensions, for example, they stress that these are largely the products of the existing alienating system: the caste system has become, they say, "highly politicized," with the idea having spread that "everybody should do everything...there is no rule that everyone should do his own job, so the result is that resources are used with greater speed and exhausted since everyone does it." Gandhi to them is a major symbol of environmentalism and the "right" kind of development, and they would like to build a self-sufficient villages, independent of towns and cities, through living simply and helping each other.

This NGO gives great stress to the role of women and believes that "unless women are involved we cannot achieve our development goals; women, children and livestock population have a linkage with the environment, they are the first victims of drought." Women must be also helped to participate and become economically independent.

NGO B works primarily among dalits, mostly agricultural labourers but some also poor peasants. They have fought for higher wages, for guaranteed employment schemes; in other words they have helped agricultural labourers build trade unions. They have also helped to organise credit schemes. On strictly environmental issues they have mainly focused on trying to rebuild the "cattle ponds" that the dalits and lower castes use for grazing their animals; they have also begun to promote natural forms of agriculture. But their arguments in doing so are very different from those of NGO A. NGO B activists and leaders take a "class" perspective, arguing for instance that issues such as tanks, canals or river waters are largely those of the "landlords": "in name it is peoples' property but actually it belongs to the elite. Tanks are controlled by landlords who get the entire benefit; it is their lands which are in the command areas, while the small farmers hardly get any share of the water. If the landlords and we together can get hold of resources we might participate, but we won't take the initiative."

They do not advocate "natural farming" for ideological reasons but from the perspective of the small farmer who they argue grows food mainly for his own consumption and sells only the surplus to the market. "We are not against high yielding varieties as such. The problem for us is that it is a package. They require pesticides, fertilisers, petrochemicals. The peasants become dependent. People should grow more; the population was not so high in the days of traditional agriculture. But people have to make a choice, have power to decide and choose. That is what we don't have. The problem today is that power is in the hands of multinationals and industrialists." Thus the main enemy of the environment is capitalism, which is

primarily concerned with profit, not people: "environmental degradation is done by the capitalist class; the landless, dalits, marginal farmers are not involved in degrading the environment but are its victims." "Class" to them, however, includes dealing with issues such as caste, gender and environment: "the idea that first you have revolution and then deal with issues like environment, caste etc. is wrong." They critique the traditional caste society and refer strongly to Ambedkar, the historical leader of the dalits.

While condemning the capitalist system, however, their socialism is a critical one and they believed that Russia followed a paradigm of development that was no different from that of capitalism. After the collapse of the Soviet Union and with no immediate hopes of revolution in the traditional sense, they believe that "it is unrealistic to think in terms of a blueprint" and there is a pragmatic stress on moving ahead with programmes that will empower the poor and increase the overall democracy and welfare of the society. Voting power, for example, is seen as important: "the poor recognize that we can decide which government gives the best results. If it doesn't happen very well in India, this is due to lack of organisation." Thus their thinking about strategy, is not so much on the ideological issues of capitalism or socialism but on "whether we can give the poor some power, three square meals a day and a better quality of life. The test of the economy is not liberalisation or whatever but whether you can take care of the basic needs of the population." The conditions for this is the empowerment of the poor: "they must be able to say, give us this otherwise you can't rule us!"

In contrast to NGO A, they do not see any special linkage of women to environment, and on the contrary accuse those who say so of placing another burden upon women. "Why do you victimize women? All of this is nonsense, men has as much responsibility as women do; all of us have a tremendous responsibility ont his issue."

NGO C takes again a different approach. They have a "target

group" (like B and unlike A), but this time it is the poor farmers of drought-prone areas who they argue are worse off than even landless labourers in irrigated regions. They see themselves as "Gandhian socialists" drawing inspiration from historical leaders of the national movement such as Dr. Ram Manohar Lohia, a socialist, and a locally famous leader of the Rashtra Seva Dal, Sane Guruji, who stressed helping the destitute and oppressed, organizing youth, and opposing the caste system. They argue, like NGO A, that their aim is a self-sufficient village, but see "self-participatory employment" as crucial to this. They would like to see enough enrichment of land and people to stop the massive migration out of the region which goes on constantly; to do this they stress watershed development of a kind that will both provide work for people and enrich the soil enough so that they can sustain themselves on their own farms without migrating. They take a pragmatic approach to ecological agriculture; one of their programmes has been to provide credit for farmers to purchase fertilisers and pesticides, and while they are now beginning to seek and propagate alternatives and natural farming methods, they do not force these on people but will help them to use chemical inputs. On the land the organization owns they are taking up nonchemical farming and hope to spread this to whole villages over the next few years.

While they condemn the "system" they do not stress either "values" (as NGO A does) or "capitalism" (as NGO B does), but they see "development" as having been an exploitative process ("it is an abuse in the name of development") which has produced a growing rural-urban divide in which the rural areas are exploited for the sake of the "exploding cities." Thus they supported the farmers' movement for remunerative prices for agricultural products. But while neither "state" nor "market" is condemned as such, they criticize the centralised market and the exploitation of farmers by middlemen, so that farmers cannot control their own marketing. The stress is on a holistic, integrated approach, in which caste, gender, and economic issues as well as those of environment are taken up together, and they

give great stress to building separate women's groups.

They appeal to mythological tradition but in a more radical way, arguing that these are symbols who reach out to the psyches of the rural people and. For instance in talking of Sita and Draupadi (heroines of India's most important epics), they stress Sita as "daughter of earth" (in an area in which many talk of the oppression of Sita by Ram) and stress the fact of Draupadi being "a woman who gives importance to decision, who has power of decision," arguing that she was the last historical example of such a woman. They believe that women do have a natural link to environmental issues, and in teaching about the environment to women, compare the earth to the human body: "if we get infected our bodies get degraded. Water is like blood and if water is degraded the whole will suffer." Their work with women includes building independent women's organizations and encouraging farmers to put at least one acre of land in the name of the women of their family.

NGO D is again somewhat different. They also stress the destructive role of the market and they see "the aping of the western model of development and the development of a culture of consumerism" as a major flaw in this. The adoption of expensive and inappropriate foreign technology, especially chemical-based agricultural technologies, is seen as a major aspect of this. Not much value, however, is given to traditional ways of life. "All talk about the link between environment and tradition is only rhetoric." While seeing "market forces" as responsible for degradation, they argue that the government should intervene and control market demand for environment-friendly products, while increasing awareness and making appropriate technology available. "A strict law which can be practically enforced needs to be promulgated. Production, or rather the culture of consumption, needs to be such that everything we use should go back to nature." This NGO has been active in working with the government on resettlement and watershed development programme and in providing training to other NGOs; in a sense their emphasis is more pragmatic.

All of these NGOs have different but still definite and worked out perspectives on environmentalism. This variety reflects specific histories. Clearly the NGOs have not come into the issue of environment and development simply through pressure from above (from donor agencies); they have their own backgrounds, both politically and in terms of their work with the people. They have been taking up problems of sustainable development (whether tank rehabilitation or developing community wells, shifting towards ecological agriculture, grazing lands and ponds for the cattle of the poor, watershed development, out of their own dynamic and dialectics. They also all refer to some aspects of Indian tradition, and invoke the names both of epic heroes and demons (Ram, Sita, Draupadi, Bali Raja) and of historical leaders who are known to the people they work with (Gandhi, Ambedker, Sane Guruji). This means a tremendous amount of ideological and practical differences in work, as they respond to stimuli from above as well as from the people they work with.

### The Indian Environmental Movement

The "Indian Environmental Movement" also includes a wide variety of groups which are not NGOs but rather self-supporting mass organizations, fighting for the different issues of the rural and urban poor, for resistance to eviction for large-scale development projects (or for proper compensation for those affected), for the promotion of natural farming methods in an effort to lessen dependence on chemical fertilisers and pesticides, for peasant-built small dams instead of often destructive large dams, or for access to land for the poor to cultivate. Organisations carrying on these fights often have very different perspectives and ideologies. Some of them do not want to even call themselves "environmentalists" (just as many women do not want to call themselves "feminists" because they have a certain stereotype of what feminism is). To get a sense of this variety, let us look at some examples:

Organization 1 is practically the most famous environmental movement in India, working since 1986 to oppose the construction

of one of the biggest dams in the world. They were the first to link the local fight against a destructive project with the critique of the entire development process and a call for a "people's development" or "alternative development." At the same time they have taken a position of "no dam", or opposing big dams as such, that has posed issues in such a way as to win them major international support and backing from the emerging conscious environmentalist movement among educated sections in the cities, but has alienated almost all of those hoping to get water from the dam and has been opposed by most other mass organisations in the region. They have thus gotten stamped as "romantic environmentalists" and opponents of progress. At the same time they have taken an active role in the formation of wider "platforms" such as Jan Vikas Andolan, Bharat Jan Andolan, Right to Life Movement and so on. All of these organisations now appeal to the environmentally benign qualities of Indian tradition, with the implication that this is a Hindu tradition; they talk of Gandhi; and they tend to target "western science and technology," imperialism, the World Bank, the IMF, GATT, etc. as the main source of environmental destruction and unsustainable development. Campaigns of these groups include demonstrations against the "Dunkel Draft," against Star TV (for instance opposing Michael Jackson's tour), and in support of biodiversity.

Organization 2, a large farmers' organisation, was until recently were most well known for their fight for higher prices for agricultural products and other issues of farmers such as a greater share of river waters, demand for lower electricity rates and so on; like other such organisations throughout India they have been considered by most environmentalists and NGOs to be a "rich farmers' organisation." However, they had also joined in campaigns against monoculture planting of eucalyptus, and recently they have taken a leading role in the campaigns against Cargill in the name of maintaining biodiversity, and have joined platforms like "Right to Life" and others in opposing the Dunkel Draft, structural adjustment and so forth. They try to take up all kinds of social issues and sometimes call themselves a

"village organisation" and not just a "farmers' organization." Much of their leadership has a "Gandhian-socialist" background. They try to differentiate themselves from "middle-class environmentalists" by claiming that these are "urban" and "compromising" in their stands.

Organisation 3 is a mass organization of agricultural labourers and farmers working mainly a drought-prone area. They have tried to stress both "class" or economic issues of organising as well as focusing on the drought affecting the entire rural community in this area. This has been expressed in their demands that work given on employment guarantee schemes should be focused on drought-eradicating, landsaving projects (the slogan "we will not break stones, we will not lay roads, we will not stop without eradicating drought"); in their demand for equal water distribution (all irrigation schemes can and should be revised to ensure sufficient water to every family for at least minimum subsistence); and in their actions of fighting for a small peasant-built dam, the Bali Raja memorial dam. They have also organised in consciousness-raising campaigns for breaking dependence on chemical agriculture in the irrigated region of the district. While they are "nontraditional Marxists" showing some appreciation of Gandhi, they talk more of the anti-caste heroes of India's recent history: B.R. Ambedkar and Jotiba Phule. Their radical use of traditional symbols is shown in the name of the dam, for Bali Raja according to uppercaste tradition was a demon king, while according to popular lowcaste tradition he was an ideal "peasant king" treacherously sent to hell by the "Aryan invaders."

Organization 4 is one of the largest farmers' organizations in India. For many years they promoted the demand for higher prices as a "one-point demand" of the farmers' movement, but made the thrust against the state ("we are not asking for subsidies but only that the state stop exploiting us.") From 1986 however they have taken up women's issues in a big way and with this started talking about "women-oriented development" in local elections, winning several all-women panchayats and organising a

campaign to put land in the name of women (called the "Laxmi Mukti" campaign). From 1991 they have taken up an official campaign for a renewal of agriculture that included proposals for experimental farming with low or no use of chemicals and other expensive inputs, establishing direct producer-consumer linkages, and home processing of agricultural products. They also argue for supporting export agriculture and believe that GATT, the Dunkel Draft and liberalization, that is, the end of state intervention in the economy, will promote prosperity in the rural community and the country in general. They appeal to Phule, Gandhi and sometimes Ambedkar, and use such symbols as Bali Raja as well as Sita and other mythological figures.

Organisation 5 is based on dalits and other landless and fights primarily for the the distribution of land from the village commons to the landless. Their leadership is dalit also and looks to the tradition of Ambedkar, with a fairly strong antagonism to Gandhi. They have also come into conflict with environmentalist rhetoric since the big landowners opposing them have said the village commons must be maintained collectively in the name of "social forestry"! However while fighting for access to this land they also concern themselves with watershed development and tree growing, as well as giving the land titles in the names of husband and wife jointly. However, they do not see themselves as environmentalists and many criticize environmentalists as being "brahmanic" and wanting to keep dalits and adivasis backward. They refused to join some anti-big dam struggles on the grounds that the environmentalist were mostly uppercaste Hindus who only talked of "alternative development" but did not deal with caste issues and, while romanticizing traditional adivasi culture, implied that adivasis should stay in the jungles.

Organization 6, a small communist party of Maharashtra, has played a leading role since the early 1970s in anti-drought organisations with slogans of equal water distribution, struggles to establish the employment guarantee schemes, and united committees of people from all over the state fighting

eviction for dams or other projects. They also do not join environmentalist-led anti-dam fronts since they do not oppose "big dams as such" but take a position of "first rehabilitation, then the dam." Now they are split with some supporting some form of liberalisation while others oppose it strongly (along with the other big parties of the left, CPI and CPM) as a World Bank/IMF capitalist plot. But both sections maintain a "class line" and focus on the interests of workers in the cities and agricultural labourers and poor peasants in the rural areas. Along with Marx, Lenin, Mao and Stalin they will invariably have photos of Ambedkar and often Phule in their trade union offices, but never of Gandhi!

Organization 7 is led by one of the most well known "environmentalist" village leaders in India, famous for his promotion of watershed development in his village. He has also sponsored an all-woman panchayat in the village. But he does not associate with others in the organizations described above or other identified "environmental" groups but identifies himself politically with the BJP. He has held national RSS study camps in his village and inaugurated conventions of the student organization, the ABVP. In village work and arguing for sustainable living there is a high input of a "Hindu" identification.

This will give some example of the variety of positions taken by non-NGOs (that is, nonfunded mass organizations) working on environmental issues. The immense variety can be seen. Some see the market as the enemy; some want the market and see the state as the enemy. Many appeal to Gandhi but with very different interpretations of what Gandhi meant; others appeal to Ambedkar but also with different interpretations. At one level most are "nonpolitical" or independent of political parties, but almost all have some indirect political affinity. Most reject the growing "Hindu communalist" political trend (but some actively associate with it) but many of those who do so also use very similar language in talking of "Indian tradition." Most emphasize "economic" (or "class") issues in some way, but they also give

very different interpretations of what this means. And along with this nearly all of them have made appeal to symbols from Indian tradition (i.e. from the epics and the mythology which are considered to be "Hindu") there is a great deal of contradiction in which symbols are used and how they are used. (Those who have been traditional Marxists) have avoided talking of

How then can we define the "Indian environmental movement" and its position on "environment and development"? What we have to note is the following:

(1) Organization No. 1 represents the dominant or hegemonic trend within the Indian environmental movement, that is, it is seen both by those who call themselves "environmentalists" and those who do not as the "mainstream" of that movement. In this sense we may call them "mainstream Indian environmentalists." But this does not mean however that these groups are identical with environmentalism in India.

(2) Organization No. 3 consists of activists who consider themselves environmentalists and are considered so by others, even though their positions are very different from that of the "mainstream." They would see themselves as representing a "red-green" trend.

(3) Organizations No. 2, 4, 5 and 6 would refuse to call themselves part of the environmental movement simply because they identify environmentalism with position No. 1, since they disagree with "mainstream Indian environmentalism." Yet they often will say "we are the true environmentalists," or "farmers (or dalits, or adivasis) are the true environmentalists" and they have well-reasoned arguments to justify these claims (e.g. the environment can only be preserved if a socialist revolution is achieved, or the environment can only be saved once farmers' poverty is ended, or the dalit movement only can save the environment). And they are definitely doing important work on the issues that are considered by everyone to be "environmental."

From this we can see that there is a problem with the categories we have used to understand "environmentalism" in India and the various trends in it. Not only are there different

interpretations of what environmentalism is. In order to recommend policy, one needs to have some analysis; in simple terms we need to know who "we" are. But this is not easy. There is a fundamental problem of classification and analysis. This paper will make some attempt at clarifying this, but before doing so, let us look at the final important "environment-in-development" position, that of the Government of India.

### The Government of India Perspective: Sustainable Development through the State

In contrast to the fragmented "environmental movement" we can more easily attribute a single "official" perspective to the Government of India simply because it is centralized state institution with a particular process of policy making. In its case the variation is primarily that between rhetoric and practice (although there will be tremendous variations between regions, between individual officials etc. that will be relevant to NGOs). the GOI's policy today has been derived largely from a third world perspective worked out in over a decade of international debated. The GOI (or its representatives has been a participant in all of these (it is notable for example that Indira Gandhi was the only prime minister besides Olof Palme to attend the greater emphasis on the role of the state.

Thus, in discussing the perspective of the GOI it is best to begin with the formation of a largely third-world global environmental perspective.

The Stockholm conference in 1972 saw a polarization between the developed and developing countries, the one stressing "environment," the other "development" many third world countries (and developmental activists within these countries) even tended to see environmentalism as a kind of western conspiracy, aimed at holding back their growth. They feared that the imposition of rigid environmental standards would be simply another excuse to discriminate against their exports, and they charged "hypocrisy" in the refusal of the developed countries to

admit that they were the major polluters, both in their historical processes of industrialization and in their current overuse of the world's resources. Developed country environmentalists, in turn, feared that the third world countries were simply going to repeat the ecologically destructive western path of industrialization.

This polarization of course was visible even before Stockholm, and an attempt to reconcile the two positions (and a kind of first expression of a third world position) was in the Fournex Report on Development and Environment (1971), arising out of a U.N.-convened panel of mainly third world experts. This made many basic points, in particular a distinction between environmental problems arising out of development, and those arising out of lack of development, or poverty, (It noted, for instance, that both "traditional agriculture" and "modern agriculture" brought with them environmental hazards in the current situation, thus marking out a clearly distinct position from the romantic environmentalists who saw only destructiveness in the Green Revolution and looked for solution simply to traditional practices). The Fournex experts felt that environmentalist concerns could be helpful to developing countries by "reawaken [ing] the concern for elimination of poverty all over the globe" and they wanted to use these concerns to push developmental politics and international aid into a greater focus on income distribution, employment, social services and political participation. In dealing with the issues of trade, the Fournex Report argued that developing countries could with care specialize in industrial fields that were becoming more costly for the developed world due to their higher environmental standards (in more blunt terms, it expressed a readiness to accept the "export of pollution") (republished in Economic Review from Sri Lanka, January 1992).

Strikingly though, after this there was for over a decade almost no official concern with the environmental aspects of development. The Brandt Commission of the early 1980s, for example, barely mentions the issue. (See North-South: A Program

for Survival, 1980 and Common Crisis, North-South: Cooperation for World Recovery, 1983). For it the problems of the South (and world) development were related to indebtedness, trade barriers, the refusal of northern countries to make any commitment about the massive transferal of funds necessary for development or to come any nearer to the official necessary 0.7% of national GNPs in aid "Energy" (a central aspect of all environmental thinking today) for the Brundt Commission was solely a matter of obtaining oil; and the Commission's second report argued that "in most developing countries, more efficient use of energy in production is usually impossible because at their stage of development economic growth typically requires more energy per unit of output" (Common Crisis, p.133).

What a world of difference between this and the process running from the Brundtland Commission and South Commission to Rio! The Brundtland Commission report (World Commission on Environment and Development, Our Common Future, Oxford University Press, 1987) and the South Commission report (South Commission, Challenge to the South, Oxford University Press, represent essentially compatible holistic views, though with differing emphases. Both are impossible to summarize in a short article; they are themselves distillations of the collective knowledge of experts, activists and government officials from around the world, in which the voices and views of the "third world" are becoming perhaps predominant force. Both, it may be noted, had important representation: Manmohan Singh was the Secretary-General of the South Commission with Devaki Jain as an official representative; while in addition to Nagendra Singh as representative on the Brundtland Commission, M.S. Swaminathan, now an important policy advisor to the Indian government on environmental issues, headed up the panel on food (Food 2000: Towards a Sustainable Agriculture. London: Zed Press. 1990). The Brundtland report, which gave birth to the concept of "sustainable development," focused on six major areas of concern and action:

(1) in regard to population and human resources, "human resource

development" and the overcoming of poverty was given a more major role than simply efforts to limit population growth):

(2) the food security section (largely following the Swaminathan report) began with the paradox that "growth in world cereal production has steadily outstripped population, yet every year there are more people in the world who do not get enough food" (12) and argued that this was linked both to subsidies and protectionism in advanced countries which had implication both from overuse of chemical fertilizers and in undermining third world agriculture through subsidies exports, and to developing countries' policies of discriminating against food-growing small farmers: "the 'terms of trade' need to be turned in favour of the small farmer" (13). Thus a reorientation of trade, along with policies of for ecological agriculture, land reform, "integrated rural development to increase work opportunities both inside and outside agriculture " were the key elements of a necessary focus on the small farmer.

(3) species and ecosystems, which took up the need for conserving biodiversity (this seems to have given the call for the Rio "Biodiversity Convention"; the concern patents and seeds was also expressed here);

(4) the recommendations on energy (At the heart of much new environmentalist consciousness argued while "energy-efficiency" was an immediate concern, in the long run "low-energy paths" based on renewable sources... should form the foundation of the global energy structure during the 21st century" and thus pricing policies, funding and technical assistance should be directed to this (15);

(5) the section on industry took the theme of producing more with less inputs;

(6) the section on the urban challenge sought to deal with the reality of burgeoning cities of the world.

The South Commission, chaired by the great African Julius Nyerere, is notable for being the first to articulate the notion of an "alternative development" as being the rejection of both the largely "statist " policies most South countries had followed

since their independence as well as the extreme market orientation of "neoliberal" economists and imposed forms of "structural adjustment" (it thus is an important example of box #5 in our table). Thus the chapter on "Self Reliant and People-Centered Development" begins:

"In most regions of the South there is deep awareness of the limitations of past development strategies and a growing conviction that the way out of the present crisis does not lie in returning to those strategies. At the same time there is profound disillusionment with the policies that a large number of developing countries are now being obliged to follow under the dictates of the international finance institutions. The need is therefore increasingly felt for finding a path of development that will lead the countries of the South out of the current crisis, into a future of equitable and sustainable development" (p.79)

The main points of this alternative development are that it should be "fueled by its own resources" with priority for "basic needs" as well as being growth oriented; that a main objective should be the "broad-based modernization of peasant agriculture and the concern for "social justice" and the "development of human resources" along with the "democratisation of political structures". The "life styles and consumption patterns" of the North are rejected as they would "cripple the growth process and intensify economic and environmental strains." The report also favours a mixed economy "in which the State and market mechanisms will have to complement each other in a creative way". It takes note of the role of women and the necessity of creating and utilising modern science and technology, with the "closing of the knowledge gap" a crucial key to development.

In regard to environment the South Commission note that the South suffers from deterioration of the biosphere mainly caused by the North but also points to environmental damage associated with its own development (p.82). Its section on environment stresses that "the South has no alternative but to pursue a path of rapid economic growth and hence to industrialise"; but it must do this

in an environmentally sustainable way. It admits the need for reducing population growth, and its main stress is on agricultural and rural industrial development:

"The reorientation of development strategies to give high priority to smallholder agriculture can assist efforts to prevent the depletion of natural resources. Integrated rural development programmes to improve the productivity of land already being cultivated will reduce the pressure on smallholders to bring marginal lands under cultivation. In many cases, land reforms that ensure equitable access to land and water resources will relieve the pressure on marginal and poor lands... Also, the expansion of rural industry will reduce dependence on agriculture for income generation and, correspondingly, the pressure on natural resources" (p.139)

It also recommends rural industry expansion to reduce high rates of urban migration; encouragement of the rational use and management of rangelands; a sound management of water resources including more efficient use of water in irrigation schemes and "the encouragement of small, community-managed and the rational exploitation of forest including techniques of agro-forestry. "The South," notes,

"should seek to develop and make use of its indigenous system of agriculture and industry. Such ecologically sound systems have been virtually lost in the North but form the basis of everyday life in large parts of the South. These systems can be usefully adapted and made part of the South's development efforts. Given the substantial contributions they can make, they should not be discarded in the quest for modernization" (p.140).

Thus the report chooses essentially a LEIDA (low external input sustainable agriculture) agricultural development strategy as contrasted to both chemical-industrial agriculture and a complete rejection of technology and economic growth in favour of "natural farming" and a "traditional way of life" that tries to go back to or maintain traditional systems. In addition, more extensive discussion of the crucial role of agricultural development stresses the role of price issues:

A strategy based on modernizing the small and middle peasant sector and geared to achieving food security is also the best means by which the agricultural sector can fully contribute to quotable and sustainable development. Experience shows that treating peasant agriculture merely as a source of surplus extraction or 'primitive accumulation' through manipulation of the agricultural terms of trade, forced sales of farm produce at low prices to the State, or agricultural taxation, can in the end be highly counter productive. Such treatment of the agricultural sector amounts to an unfair distribution of the gains of economic growth between urban and rural areas. the consequential stagnation in rural income in turn impedes efforts to speed up industrialization, whose success depends on an expansion of the markets for what industry produces. The end result is the retardation of the growth process as a whole, while food insecurity persists or becomes worse.

The harmful results of agricultural neglect can also be seen in the gradual conversion of many developing countries, particularly in Africa and Latin America, from food exporters into net food importers. This shift has also in part been hastened by the policies of developed countries, whose heavy subsidies to their own farmers have depressed world food prices, thereby hampering the drive to expand food output in many developing countries ....Imports of cheap food and discriminatory government policies often encourages the consumption of foods that are not produced domestically...The south's development nations, experience, as well as that of today's industrially advanced nations, clearly indicate that a diversified economy with a large industrial sector can hardly be achieved unless a modern, broad-based and highly productive agricultural sector is built up" (pp. 84-85).

(It may be noted that in contract to both the Brundland Commission and South Commission, NGOs and "environmental movement" activists rarely talk of price issues, though nearly all sustainable development studies agree on the significant negative impact of low energy and low food prices. Furthermore since Novib's prospectus includes "lobbying in the North" to help

the South's developmental efforts, the question has to be asked why there is no mention of fighting the subsidies and protectionist barriers imposed in Europe and U.S. which hamper the development of Southern agriculture and encourage chemical-industrial agriculture in the North itself: it seems that taking on the "big farmers lobby" in France and other countries of Europe is a much bigger task than asking the North to stop importing hardwood!)

After these two commissions came the United Nations Conference on Environment and Development (UNCED) at Rio in 1992, the "Earth Summit." But in spite of a massive buildup, many "precoms," a high level of NGO participation, massive publicity connected with growing environmental awareness in all countries, and a huge show (marked by the fact that it was attended by nearly all heads of state, in contrast to Stockholm), Rio proved a disappointment to most those concerned about "environmental and development" in the South. There seemed to be a new polarization, with again the South stressing development and the North "environment"; the North tended to argue that population was a major cause of environmental stress on the earth's "carrying capacity" while the South responded with the charge that the North's smaller population exploited and consumed an overwhelmingly larger part of the earth's resources. In addition the South itself was divided, with China no longer taking a leading role in voicing third world demands and with oil producers unwilling to discuss proposals for minimizing fossil fuel energy use. Finally the U.S. president Bush, trying to take a hardline stance which he thought would win votes in the forthcoming U.S. elections, stonewalled on almost every issue of concern to the South. In the end, the South felt upset at the relatively small amount of funds committed; the U.S. refused to sign the biodiversity conventions; and (this was felt as a South gain) a forest convention was refused by the South with India and Malaysia taking the lead in resisting pressures for "globalization." Thus, there was a lot of unhappiness with Rio and the headings of some reports ('The Tower of Babel: despite the hype, the rich

and poor nations fail to see eye-to-eye." in India Today; 1, June 30, 1992; and "Rio: The Green Farce," in Down to Earth, May 31, 1992) indicate that it was seen as an impressive and sometimes even fund show with little substance. Still, sustainable development and all that is associated with it is very much on the human agenda today, and the Earth Summit was an important milestone in this process.

The Government of India's involvement in such an international process, as well as the need to respond to obvious environmental crises and a growing environmental movement at home, led to the formulation of a new national environmental policy. Yet this policy, as expressed most recently in the "National Conservation Strategy and Policy Statement on Environment and Development" (1992), though drawing from major international reports, appears largely inadequate and even superficial as contrasted with them. The policy Statement follows the Fournex Report in stating that environmental problems can be classified as arising either from the process of development itself or from conditions of poverty and underdevelopment; then, again in a kind of superficial reconciliation of stress on population by many developed countries and third world stress on per capita control of resources, it sees the growth in demand (from richer sections and from a rising population) exceeding "carrying capacity as responsible. Various aspects of impoverishment and the environmental crisis are identified (dwindling forest wealth, land degradation, including of wetlands and pasturelands, pollution arising from toxic wastes and nonbiodegradable consumer items, increasing flood to towns and cities, incorrect siting of industries) but it is only said that, "we are faced with the need for accelerating the pace of development for alleviation of poverty...On the other hand we have to avoid proceeding along paths with environmental costs so high that these activities cannot sustained. Development has to be sustainable and all round, whether for the poor or the not-so-poor, for the village folk or for the town people. The development models followed so far need to be reviewed" (115).

Policies for action suggested in this report are wide-ranging: the section on agriculture stresses the need for development of integrated pest management, promoting methods of sustainable farming (especially "organic and natural farming"), promotion of biofertilizers and biopesticides, etc. Some good suggestions are made for industry, regarding pollution control norms, environmentally clean technologies, efforts to force industries/companies to internalize the "externalized" costs with the "polluter pays" principles, etc. With regard transport it is suggested that fuel consumption increase should be reduced, that rail transport should be substituted wherever possible for road transport.

Yet all of these suggestion, good when taken piecemeal, are integrated into no overall firm policy. Unlike both the Brundtland and South Commission reports, the Government of India expresses no "ecological economics," no admission of the possible contradictions between economic growth by the traditional fossil fuel-based industrial methods and ecological sustainability, no recognition of the need to reconcile these by reorienting the path of development and the use of energy. Instead the issue of "environment and development" in the document focuses largely on "conservation" (of forests, biodiversity, land etc.): "Conservation"...is the key element of the policy for sustainable development " (p.4)

The GOI position on the basis of this Policy Statement could be said to fit nowhere. In a sense the GOI position moves towards that of "mainstream Indian environmentalism" when it states that "it is the process of industrialization and the continued profligacy of industrialised economies that have created the problems which threaten our planet and its life forms" (7.2) while in contrast "India's traditional life style, still followed by a vast majority of its population, has always emphasized conservation of plant and animal life, waste minimisation, recycling, simplicity in food and other such environment friendly attitudes" (7.4). On the other hand it has not forsaken the basic orientation to statist controls, which is the main

point of the critique of the statement by the Down to Earth editors: it is simply posing a dreamworld, without any realistic machinery for implementation:

"The central issue -- and one that the documents avoids..is that of institutional change. The documents gives the impression that the existing bureaucratic mechanisms will provide us with a brave, new world that will be both green and wonderful (September 15, 1992,p.3).

The Indian State has only incorporated into its bureaucratic practice the superficial buzzwords and phrases of the sustainable development analysis, and romantic environmentalism. This is shown even further in Manmohan Singh's lecture on environment and the new economic program (see "Environment and the New Economic Policies ," June 17, 1992), which ignores the notion of any inherent connection between environment and development and instead takes the position that the growth generated by the new economic measures will make it possible (later?) to take up the concern for environment; this is nonenvironmentalist position which assumes growth will solve all problems

With such a position, one cannot expect the government to make any major changes on its own in the direction of really promoting sustainable development, though the adoption of the phrases and some of the piecemeal programmes can provide some substantial room for activists and organisations to maneuver, particularly when there are enlightened local officials.

### Classifying the Types of Environmentalism: A Proposed "Matrix"

As we have seen, there are a bewildering variety of different kinds of environmentalism, and many different ways of understanding how protecting the environment is linked to "development." This in part reflects differences in understanding how development itself is to be achieved. In India, historically, two figures represent alternative ideas of development: Gandhi and Nehru. Gandhi opposed a form of development that focused on industrialism and wanted instead a village-orientation that included the limitation of peoples' needs. Nehru, in contrast, stood supposedly for "modernity" and was at the forefront of the developmental path which was actually chosen in India: one that called itself "socialist" but in actuality consisted of a heavily state-directed and state-dominated economy which sought to foster the growth of heavy industry in the belief that this would provide the foundation for self-reliance.

Yet most of those who call themselves "Gandhians" today and claim to be following Gandhi's heritage of "swadeshi" in fact support a statist model; nearly all existing Gandhian institutions are heavily dependent on state patronage. Gandhi himself was opposed to too much planning and allowed for the maintenance of a private capitalism in which capitalists would be "trustees" of people's interests. "Socialist Gandhians" like Ram Manohar Lohia wanted to oppose the centralised state as well, but could not define an effective way to do so. In contrast Today, many "Socialist Gandhians" seem to be asking for the state to defend Indian capitalism against competition from multinationals; they are therefore at least partly Nehru-ites. Experiments such as those of China with a "socialist market economy" are simply ignored. The process of thinking about how to achieve an environmentally sustainable and successfully growing economy has hardly begun.

It is in this context that there are a wide variety of forms of environmentalism among both NGOs and those in the mass movements. How can we classify these in an era in which the

traditional categories even of "right" and "left", "progressive" and "conservative" hardly seem to make sense?

But there are many common themes to any form of environmentalism and development. Let us take an important survey of sustainable development in South Asia by a Pakistani:

"There is urgent need for moving out of the narrow confines of a conceptual approach that takes GNP growth centralised state structures as the emblem of development, the credit-worthiness for loans as a measure of economic health, and which regards people as passive recipients of the drops that are supposed to trickle down of South Asian development experience, generations of poor, mutilated by malnutrition, come into sharp focus.

At the same time the image of once verdant slopes of our northern mountains and the fertile fields that nestled at their feet, begins to fade. A childhood image that is lost within a single generation before the onset of deforestation, salinisation and desertification -- processes unleashed by a growth mechanism that is guided by the hidden hand of the market, rather than the aspiration of our people to sustain life across generations. Yet even as the human and natural resource base is getting undermined, mounting debt burdens arising mainly from the rising expenditures of centralised state apparatuses and ill-conceived policies imposed by international financial institutions.

As we look to the future, an urgent need is felt today for a new approach to development. A perspective within which people in their diverse locations can acquire control over the decisions that affect their immediate existence, in which the autonomy of communities and states can be sought from the tentacles of an international financial system that is serving as a conduit for transferring the real resources out of the fragile resource base of the poor; a perspective within which production and economic growth is conducted to sustain life rather than serving to undermine it....The particular form economic growth initiated by post-colonial elites in this region is such that the very resource potential which could have been harnessed to overcome poverty is instead being rapidly eroded" (Akmal Hussain,

"Resource Base Erosion and Sustainable Development in South Asia," in Economic and Political Weekly, August 18, 1990)

This passage not only expresses the poetry and anguish of the environmentalist understanding today; it also covers most of the major themes. Taking it as a basis, we might classify the parameters of this understanding in terms of the following themes (and variations on them):

(1) A critique of development is connected with all forms of environmentalist consciousness. Sometimes it takes the form of only attacking a particular model of development, often arguing that merely economic criteria are insufficient; some environmentalists reject even the notion of "development" as such, feeling that it is inherently associated with oppressive and alien attempts to drag people away from herently more sustainable and humanly satisfying traditional ways of life. We may outline three basic positions along a "developmental axis.": total rejection of "development" as being inherently antisustainable linked to calls for maintaining or restoring traditional way of life; calls for a "sustainable development" or "alternative development" (Parayayi vikas, a concept that has become important in Maharashtra) or "peoples" development" (jan vikas, the term emerging out of the environmentalist 1989 Harsud rally); and arguments for more rapid development as providing the only real material base to solve problems of both poverty and environmental pollution.

Linked to this "developmental scale" are at least two important associated themes. The critique of development is normally linked to a critique of industrialization and of modern science and technologies as such. In its moderate (or "sustainable development" form) this means a search to find more benign technologies -- "environment -friendly" technologies in one contemporary jargon; it means also an instance "agro-industrialization" or "dispersed industrialization," based on biomass or "renewable energy" source as contrasted with fossil fuel (coal and oil) energy nuclear energy.

In its more extreme form, this critique of industrialization and technology is linked to beliefs that "western science and technology" itself is to blame for environmental destruction and that indigenours (tribal, or traditionla Indian/Hindu) ways of life and the "technologies" associated with them were environmentally sustainable. And this is also linked to a scale of spiritualism/materialism in which the destructive western technologies are part of a dominating, commercialized, individualistic and materalistic view of life; in this understaning the emphasis is on the "human values" and spiritualistic cultures associated with nonwestern societies. In its extreme forms this critique attacks all of western vlaues or the "western model" as materilistic; in the more moderate version the material base may be given priority but there is a recognition of the emphasis on rapid development may simply ignore cultural issues and beassociated with a pure "economism".

(2) A critique of centralised state and market systems is, again, part of almost all forms of environmentalism. Here again there are important variations. There are those who critique both market and state (this tends to be the theme of the Greens in western societies); there are those who see the primary threat of ecological destruction as coming from the market and private capitalism (this tends to be a dominant theme form those who come into the environmental movement from a left or socialist background, posing the confrontation of today as that between "the Green wave and the free market"); and there are those who see the centralised state as the primary enemy.

This critique of centralised state/market power is associated with ~~themes of autonomy and peoples participation~~ which in one way or another, are part of all conteportary environmental and new developmental consciousness. Again the variations are numerous: autonomy may be taken as autonomy form the state (decentralisation, community control) or autonomy from the market ("delinking"); the mian threat to autonomy (or the main source of domination, the osource of the unsustainable and impovershing developmental path) may be seen as coming from

international forces (such as the World Bank, IMF, U.S. imperialism etc) or from national ruling classes ("the post-colonial elites," the centralized power in Delhi etc.) or even from locally dominant groups. Again, autonomy themes often tend to multiply in nonwesterners, peasants, dalits, women, adivasis, etc. all come into play at different times.

From these two crosscutting themes or scales we can derive the following matrix within to classify various notions of environment-indevelopment; (see next page)

Obviously this classification should not be taken as an absolute way of fitting themes into boxes but as a guide to thinking. With its help we can understand some of the cross-cutting ideas, we can also see how groups/institutions/individuals shift and develop their positions. For instance, when Indira Gandhi representing the Indian government (and indeed the common "third world" position") at the Stockholm conference in 1972 argued that "poverty is the worst polluter" she was taking a stance largely in box #3, assuming that rapid development under mainly state control was the main solution to environmental problems; by today however the official positions of the Government of India have moved closer to a sustainable development position and it stands on the border between boxes #2 and #9 contrast, the World Bank began approximately in the position of #9 (with the famous memo by Lawrence Summers symbolizing this position) but under a good deal of international pressure and reassessment of reality it has admissions in its material of the need for state intervention (as seen in its World Development Report; Development and the Environment, Oxford University Press, 1992).

MATRIX OF PERSPECTIVES ON ENVIRONMENT AND DEVELOPMENT

Attitudes Towards Development

Rejection of  
Development  
is necessary

"Sustainable  
development"  
can be achieved

Rapid devel  
opment is the  
the answer

Main threat of  
ecological dest-  
ruction is from:

	1	2	3
Market (capitalism)	Mainstream Indian environmentalism	"Green social- socialism" ecological Marxism	Polluting socialism (Leninism)
Both market and state	4 communitarian anarchism ("Deep Ecology")	5 Brundtland Comm- ission, South Commission,	6
State	7 libertarian anarchism	8 "Green capitalism" ecological liberalism	9 Polluting capitalism

Within this matrix as a whole, all the boxes in the left and centre (#1-2, 4-5, 7-8) can be considered to be "environmentalist" of some form or another. The matrix can be taken as a suggestion, and the various NGOs might think about how to orient themselves in terms of the categories. Let me suggest some of my classifications.

First, let us locate some of the historic figures of Indian nationalism and social movements. Jawaharlal Nehru, for example, belongs very largely in Box #3, which I have called (fairly or unfairly!) "polluting socialism." That is, he called himself a socialist; he helped to institute an economy which was very largely state-dominated (two-thirds of employment in the "organized sector" is in the public sector), and he wanted a rapid development based on heavy industry which foresaw no environmental problems. Mahatma Gandhi, on the other hand, belongs very largely in box #4, since he came close to themes of rejection of development as such but seems to have seen the state more of an enemy than private capitalism.

(2) The dominant trend in the Indian environmental movement, which I have called "mainstream Indian environmentalism", belongs in box #1. The main ideological themes of this trend are exemplified in such slogans as "the free market versus the Green Wave," "traditional Indian values versus western science and technology" and so on. While there is a nominal opposition to central statist power and a call for decentralisation and community control, invariably people in this trend attack "capitalism", "the market" or "neocolonialism" as the main enemy, and see these as being imposed by the overwhelming arrogant power of such international institutions as the World Bank and IMF.

Popular English publications representing this trend include Vandana Shiva's Staying Alive and Winin Pereira and Jeremy Seabrook, Asking the Earth. Its outlook is well represented by the summary on the back cover of the latter book: "Most of the Two-Thirds World had sustainable systems in place until the advent of colonialism. Colonialism should perhaps be seen as the means which enabled Europe to nurture its own unsustainable system and to destroy its own natural capital. The spread of neocolonial Western 'development' continues the process of despoliation. A retrieval of sustainable practices is the most urgent task facing humanity."

(2) However there is also a "NeoHindu environmentalism" which shares this box and the basic positions belonging with it. The main difference is the degree to which "Indian tradition" is characterised as a "Hindu" tradition and in which social institutions connected with it (such as the caste system) are directly or indirectly justified. Not all of the Hindutva movement is environmentalist, just as not all of Marxism is "ecological"; there is also within it a solid trend towards rapid economic growth and building up the power of a centralized state. Therefore, in some ways our matrix does not capture the dimension of the opposition to the caste system, patriarchy and other forms of oppression.

(3) There are also trends which oppose centralized state power, rejecting both state and market and seeking to actively

system and to destroy its own natural capital. The spread of neocolonial Western 'development' continues the process of despoliation. A retrieval of sustainable practices is the most urgent task facing humanity."

(2) However there is also a "NeoHindu environmentalism" which shares this box and the basic positions belonging with it. The main difference is the degree to which "Indian tradition" is characterised as a "Hindu" tradition and in which social institutions connected with it (such as the caste system) are directly or indirectly justified. Not all of the Hindutva movement is environmentalist, just as not all of Marxism is "ecological"; there is also within it a solid trend towards rapid economic growth and building up the power of a centralized state. (Therefore, in some ways our matrix does not capture the dimension of the opposition to the caste system, patriarchy and other forms of oppression.)

(3) There are also trends which oppose centralized state power, rejecting both state and market and seeking to actively build production along lines of self-reliance and subsistence with a stress on equity and the rural poor, which would primarily fall in box #4 of the table. One example would be Organization 3 described above, whose activists would oppose both state and market and often call themselves "ecological Marxists." There are other lesser-known organizations, some NGOs and some working as nonfunded "networks," which take such a position. For instance there is the Prayog Parivar network in Maharashtra, which focuses on building experimental sustainable agriculture, often farming on very small plots of land and even on verandas in city homes: they are a bit more market-friendly but generally want to ignore the market and focus on building subsistence-based self-reliance, rejecting centralized structures and believing that a sustainable society can be achieved with the application of the "decentralised human mind" to inherently decentralized solar energy and biomass-based production. In contrast with the "mainstream Indian environmentalists," external market or state structures are not seen as having much ability to prevent or

further such a process if people themselves experimentally and collectively decide on it.

(4) The magazine Down to Earth and the Centre for Science and Environment can, I feel, be largely located in box #5 although in some ways there is a tendency to see the state as a bigger obstacle than the market to sustainability and people's participation (in other words there is a drift towards a "green capitalism.") Outside of India, the Brundtland Commission, the South Commission, and even the recent Human Development Report can also be largely located in box #5, that is, seeking to use the institutions of both state and market but stressing a people's participation or people's power, over them in a way that will build a "sustainable development."

(5) The dalit movement has emotionally been located to a large degree in box #3, feeling the need for rapid developmental growth to remove their poverty and oppression and tending to look to the state to take action. Ambedkar's slogan of "state socialism" (which is remembered even when his earlier more liberal economic writings are forgotten) and his hostility to traditional Indian villages (which he called "cesspools") is an indication of this. Where they have disagreed with the Nehruvites and others in box #3 has been in seeing caste, not class as the main factor, and identifying brahmanism rather than capitalism as the enemy. But a strong hostility to themes of swadeshi and much of the Gandhian/neoHindu-dominated environmentalist trend is marked and can be seen in magazines such as Dalit Voice. Now there is some movement in the direction of recognizing environmental issues, in asserting that "dalits are the true environmentalists," and some of their organizations have taken up issues that are considered to be environmental issues.

(6) The traditional left parties of course are the primary example of our box #3, but some of them have been moving towards #2, that is, towards an ecological Marxism. D.D. Kosambi, the greatest Indian Marxist historian, archeologist and scientist, was a forerunner of this trend, writing against the dangers of

as far back as the 1950s.

(7) The farmers' movement has had its own form of environmentalism, though most activists would refuse to identify themselves as "environmentalists." There are now two clear sections in this. One, spearheaded by Nanjundaswamy's Rayat Sangh of Karnataka, seems to be locating itself with "mainstream Indian environmentalists" in box #1, with its swadeshi rhetoric and campaign against Cargill and multinationals and the open market associated with the Dunkel Draft. The other (and larger) section, associated with Sharad Joshi's Shetkari Sanghatana of Maharashtra and with the largest section of the Punjab farmers' movement led by Bhupinder Singh Man, identifies the Indian state and often the state as such, as the major enemy. When Joshi translates the concept of "sustainable development" into Marathi he calls it "moving in the direction of Bali's kingdom," that is, identifying it not with "Ram rajya" as the Gandhians and neoHindus do but with the rakshasa (demon) king Bali who represents the nonAryan original population. This position which includes a shift towards natural farming, home processing of agricultural products, direct consumer-producer linkages within the framework of a market economy, is part of a broader ideological framework that can be classified somewhere between a "Green capitalist" and a libertarian anarchist position on the state, that is between boxes #7 and #8.

(8) Finally, the government of India position, we might argue, is really "nowhere" - it has much of the practice and analysis of the "Nehru model" still (a formal "polluting socialism", box 3) though it uses a rhetoric and catchy phrases from both mainstream Indian environmentalism" and "sustainable development" (boxes 1 and 5)

Recommendations : "Asking the People, Asking the Earth"

(1) Novib's basic concern is for the "structural alleviation of poverty" with the integration of environmental concerns (and gender and other concerns) into this; if we take it that these should be balanced, then the basis for understanding issues comes closest to that of the Brundtland and South Commissions: that is, economic growth must be linked with not only environmental sustainability but also poverty alleviation and "human development." A small farmer-based agriculture is seen as a central aspect of this "sustainable development"; and price issues (e.g. the prices of energy and agricultural products) are dealt with along with the necessity for appropriate government- or agency-financed programmes -- in the context of seeking a structural "alternative development" that envisages a decentralised and democratised political system and a mixed economy that utilises market systems along with the state. Making available Our Common Future and Challenges to the South (and here Novib should purchase the Indian or other third world editions) to all NGO partners could be helpful.

(2) It is important that this entire framework of understanding continues to be developed in dialogue with Novib partners. The various NGOs which are taking up development issues are doing so out of a history of involvement which has its own dynamics. There should be dialogue and interchange of the various viewpoints that exist, but differences should be recognized in a pluralistic approach that avoids imposing a premature closure.

(3) Novib should incorporate a kind of "environmental impact" clause in its assessments of projects; the Brundtland Commission also makes recommendations along these lines. But again there should not be imposition. Novib partners may take up various environmentally-related programmes (and we can assume that they would be doing so in any case and not simply because these are now fashionable for funding), but the fact is that the success/relevance of these may be related more to the technical and organizational capacities of the Novib partners rather than

to their framework of thinking ("ideology"?) about environment-in-development. That is, to a great extent NGOs are basically professional service organisations, and it may be that in most cases it doesn't matter what their overall ideology is regarding long-term goals so much as whether they provide good services to people. People will judge them on the latter basis, mainly (to take an analogy: many socialist and radical activists now complain that after long years of work fighting for "socialism" and "revolution," people were basically using their skills and energy to get higher wages, facilities for their slum colony etc. while not paying much attention to the rhetoric or long-term goals. Who can say the people were wrong in this?)

(4) In regard to promoting a sustainable agriculture, earlier Novib discussions pose the issue in terms of "modernisation agriculture" versus "ecological agriculture." This has the danger of implying that high-input industrial-chemical agriculture (or "Green Revolution" agriculture as it is called in India) is truly "modern" and "scientific" and that "ecological agriculture" is equivalent to traditional practices. That is not true. Industrial-chemical agriculture was an expression of a particular phase of historical development, pushed by states and petrol-chemical corporations; that stage is now becoming historically outmoded. Moving beyond it does not mean going back to "premodern" agriculture; it rather involves using the human mind and the best insights of science and technology to develop traditional practices in a holistic and ecological way.

This direction is not something that is simply being pushed by a small band of practitioners of "organic farming." Rather it is a direction in which the masses of farmers and producers in the South are tending to move. There is a growing interest in ways of doing away with chemical fertilisers, in earthworms, in the use of manure, in recovering or maintaining traditional varieties, among farmers themselves -- and it is being helped by rising fertiliser costs which force a change in practices. We can see this reflected not only in the fact that mass farmers'

organizations are taking up such programmes but also in increasing articles on such subjects in "commercial" farming magazines.

An earlier discussion on "environment and development" posed the question: "Will Novib withdraw support to a farmers' association which looks after the political interests of member farmers in an excellent manner, because they strive for a form of agriculture with a negative impact on the environment?" My answer would be no. In fact it is a hypothetical question: we may assume that the farmers themselves will be moving, given the opportunity, for more sustainable forms of agriculture. If an association is "looking after the political interests of the farmers" it will be able to move with them (and lead them) in this respect also.

(5) Basically what Novib does can be best done on positive lines:

- \* holding training programmes and seminars for Novib partner organizations on issues of ecological agriculture, fostering exchange and cooperation between different NGOs working on this, fostering dialogue between NGOs and mass organizations (of farmers, of dalits, women etc.) in their areas, encouraging awareness campaigns by the NGOs themselves;
- \* stepping up their own ability to provide technical help and information services to aid a sustainable agriculture.

(6) Finally, in regard to "environment-in-development" generally, Novib is moving in the right direction in encouraging work on this issue, including lobbying, "in the North" also. There perhaps needs to be wider discussion about what the direction of lobbying should be. (For instance, would discussions be organized in Holland on the bad affects on the third world of subsidies to agriculture given by European countries?) Many questions remain. Sustainable development is after all for all countries. There may be problems here similar to the "women-in-development" paradigm: a Dutch woman visiting India recently commented quite sarcastically on "women and development" studies in Holland to the effect that they are

talking only of the third world, that they never have anything to do with the problems of women and the women's movement in the Netherlands itself. It seems that in part the term "development" becomes a code word for problems of the South, the assumption being that since "developed" countries have already "made it," their problems don't need to be discussed. "Partners in development" eventually takes on a larger meaning: that while dealing with its own problems the South can also help the North get out of its "high-level equilibrium trap" of a too high-input, fossil fuel-centered outmoded industrial production system. Who will be piloting "spaceship Earth" will be vastly transformed in the process!

#### DEFINITIONS:

##### CONCEPTS RELATED TO ENVIRONMENT

(the quoted definition are taken from Webster's New Collegiate Dictionary, 1977; the other notes are mine)

Carrying Capacity: "the population (as of deer) that an area will support without undergoing deterioration"

Note: this is frequently used concept that is often linked with population concerns; but in regard to human population it is impossible to even estimate what number can be noted that the common sense of "pollute" may see things as dirty or contaminating which are not (i.e. in a scientific sense they may be quite valuable). In fact the actual destructiveness of pollution is clearly inversely related to measures for recycling. "Pollution" is thus a much less precise concept and (in the Indian context) has an uneasy connection with traditional caste-based ideas of ritual pollution.

Recycle: "a: to process (as in liquid body waste, glass or cans in order to regain material for human use"

Note: the cycle involved may be very small (e.g. it has been argued that thereapy is the ultimate form of recycling!) or very large, going through highly complex systems and huge distances in

space (or even time). the problem is, of course, that large complex recycling systems are very difficult to understand and control.

Renewable:

"capable of being renewed: esp. capable of being replaced by natural ecological cycles or sound management practices" supported on any given area of land without dealing with the nature of the productive system.

Conservation: "1: a careful preservation and protection of something; esp. planned management of a natural resources to prevent exploitation, destruction or neglect"

Contaminate: "2. to make unfit for use by the introduction of unwholesome or undesirable elements" (see pollution, pollute)

Environment: "1. the circumstances, objects or conditions by which one is surrounded; 2 a: the complex of climatic, edaphic and biotic factors that act upon an organism or an ecological community and ultimately determine its form and survival b: the aggregate of social and cultural conditions that influence the life of an individual or community" (note that the "social environment" or the "human environment" is also stressed here).

Externalizing Costs: Environmental economists argue that enterprises (or economies as a whole have not paid the environmental costs or do not take this into account in determination of profitability; that is, costs are "externalized" or born ultimately by others, such as the poor, other societies (e.g. colonized countries paying the ecological costs of industrial development in Europe) or future generations. Therefore they recommend that costs must be "internalized" (on the "user Paus" principle, e.g. by higher prices for energy use.

Food Chain: "an arrangement of the organisms of an ecological community according to the order of predation in which each uses the next usu. lower member as a food source"

Food Cycle: "a group of food chains constituting all or most of the food relationships that enable an ecological community to survive"

Pollution: "a: the action of polluting: the condition of being

polluted"

Pollute: "1. to make ceremonially or morally impure... 2: to make physically impure or unclean: befoul, dirty, esp: to contaminate (an environment) esp. with men-made waste syn see contaminate"



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Realising the folly of digging tubewells for irrigation which resulted in a sharp fall in the groundwater level, and having participated in a permaculture (PC) design workshop in 1987 with Bill Mollison, Gopal and others planned the design of a demonstration permaculture farm on a 3.5 acres plot. The aim behind setting up such an experimental farm was to make a family of 10 members self-sufficient for more than 60 percent of their food, fuel and fodder within five years. In all the work undertaken, the principles and guidelines of PC were adhered to. All plantings were done in small holes; plenty of coconut fibre and other waste organic material was used as mulching; minimal farmyard manure with a scattering of bone meal, neem cake and dolomite/lime were the only additives to the soil: no inorganic chemical fertiliser or pesticide was used. An attempt was made to arrest wind and sheet erosion of soil; harvest all rain water into the soil itself; raise large amounts of vegetables; lay the basis for production of biomass and allow the chicken free run. Thus laying the foundation for a permanent agricultural system for the production of food, fuel and fodder on a perennial basis.

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Participant of a seminar and exposure programme on sustainable agriculture and sustainable development in Germany, October 1991. The seminar was organised by the Bread for the World.

*(Source: IFOAM Newsletter, December 1991)*

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**MR. KRAGHAVENDRA RAO**  
PLOT 13, SRINAGAR COLONY  
HYDERABAD - 500873

Ph(R): 0842-36365

He along with his wife Shylaja, established a sustainable agricultural unit on 1.5 acres of land on the campus of the Rishi Valley School using the principles of permaculture design. They grow vegetables and fruit using organic techniques. He has also experimented with sheet mulching and companion planting. His varied interests include - wasteland afforestation and watershed development, small scale earthworks for rainwater harvesting; collection and propagation of lesser known wild fruit species, soil and water conservation etc.

*(Source: personal communication, 1993)*

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## ANDHRA PRADESH

MS. SHYALAJA RAGHAVENDRA RAO  
PLOT 13, SRINAGAR COLONY  
HYDERABAD - 500873

Ph(R): 0842-36365

She alongwith her husband Raghu, established an organic farming unit on 1.5 acres of land in the Rishi Valley School, Chittoor, incorporating permaculture design techniques. She also initiated a small seed exchange programme with rural women practising organic agriculture in Peechi. She has been collecting information on multipurpose tree species, composting methods and medicinal plant species. Has practical experience in soil and water conservation, afforestation and horticulture.

(Source: personal communication, 1993)

DR. VENKAT  
PERMACULTURE ASSOCIATION  
117, EAST MARREDPALLI  
SECUNDERABAD - 500026

He designed the building of a demonstration permaculture farm for the Deccan Development Society. He is also involved in activities like documentation, education and information/seed exchange. He is involved in an attempt to evolve sustainable agricultural systems based entirely on organics, primarily for 'subsistence' rather than for the market, based on the philosophy, principles and ethics of permaculture.

(Source: personal communication, 1993)

## ASSAM

MR. LOKEN WARIE  
RUNIKHATA HIGH SCHOOL  
P.O.RUNIKHATA  
KOKRAJHAR DISTRICT - 783373

He is actively engaged in Organic Farming.

(Source: IFOAM Newsletter, December 1991)

## BIHAR

MR. DOMINIC BARA  
EXECUTIVE DIRECTOR  
VIKAS MAITRI  
POST BOX 112  
P.N.BOSE COMPOUND  
PURULIA ROAD  
RANCHI - 834001

Ph: 311749

Vikas Maitri organises a number of courses, from time to time, on sustainable agriculture for small farmers wherein all aspects of organic farming are explained by farmers who have been experimenting with this method of farming. They define *Jaivic* agriculture as a method of agriculture which makes the best use of modern scientific discoveries while avoiding the unscrupulous use of artificial agricultural inputs. Thus, it draws both from modern and traditional agricultural practices.

Bara has also supervised the establishment of 12 organic farms in different localities for the purpose of experimentation and demonstration. Has published articles on sustainable agriculture.

(Source: personal communication, 1993)

MR. PRANAB CHOWDHURY  
SHRAMAJIVI UNNAYAN  
GOBARCHUSI  
PATAMDA  
EAST SINGBHUM - 832105

Ph: 0657-20509

He is involved in organic farming.

(Source: Referred by Dr.(Mrs.) Sulbha Khanna)

MR. B.B. SINGH  
TRAINING ORGANISER  
KRISHI VIGYAN KENDRA -GRAM NIRMAN MANDAL  
SARVODAYA ASHRAM  
P.O.SUKHODEORA - 805106  
DISTRICT NAWADA

Krishi Vigyan Kendra experimented with farming using organic manure combined with some chemical fertilizers. During the course of their work they discovered that when they used larger quantities of organic manure, both the yield as well as the soil quality was much better. When organic manure became scarce and they used chemical fertilisers, the soil conditions deteriorated

## BIHAR

and the yield went down.

(Source: personal communication, 1987)

MR. BINAY SINGH  
FARMER  
MADHUPUR  
SANTHAL PARGANA DISTRICT

He has converted an eight acre, boulder-strewn barren area into a lush tree farm. He grows some mixed species of trees like *Terminalia Arjuna*. He has also successfully raised other fruit, fodder and fertiliser trees.

(Source: Gram Vichar, June 1986)

MS. FABIENNE TINGRY  
VOLUNTEER-ECOLOGICAL AGRICULTURE  
ASVIN PROGRAMME AND ECO-FARM PROJECT  
SOCIETY FOR RURAL INDUSTRIALISATION  
BARIATU  
RANCHI - 834009

Ph: 0651-313668

The ASVIN programme aims to develop suitable landuse and production systems for small farmers, particularly tribals, so as to evolve a replicable system of ecological agriculture. Starting from sheer barren land a year and half ago, they have now developed the basic infrastructure to start production in an integrated and sustainable way.

Tingry is involved in activities like education and research in the field of ecological agriculture. She has also organised the training of three Indian NGOs by a French expert at the request of CIEPAD, a French NGO involved in Agroecology in France and Africa.

(Source: personal communication, 1993)

## GUJARAT

MR. MAHENDRA BHATT  
ENGINEER  
SARVANGIN GRAM VIKAS MANDAL  
MANGROL  
VIA RAJPIPLA  
BHARUCH - 393150

PRAYAS was set up by young and middle aged Gandhians and engineers who moved into villages to initiate experiments in rural social upliftment. Besides several other rural development activities, they also practice, experiment and promote organic farming practices. Active members of the group include Mahendrabhai Bhatt, his wife Bhartiben, Rajnibhai Dave and family and Jagdishbhai Lakhania. Their trust, The Sarvangin Gram Vikas Mandal, is now involved in setting up a rural institute called the Gram Energy Vidyapeeth. Members of Prayas are also on the team of resource persons of the Manviya Technology Forum. Bhatt has co-authored the book *Sajeer Kheti* and has also written articles on organic farming.

(Source: personal communication, 1993)

DR. AMUL DESAI  
MAJI DAYA  
TITHAL P.O.  
VALSAD DISTRICT - 396001

He has carried out experiments in organic farming based on Gadhia's FARM method and Martin's Living Water. He also holds meetings at his farm to promote the same. He is a resource person for various NGOs.

(Source: personal communication, 1993)

MR. VINODCHANDRA DOLATRAI DESAI  
NIFFCO  
BEHIND POLICE HEADQUARTERS  
MOGRAWADI  
VALSAD - 396001

Ph: 2767

Res: AT/ PO HANUMAN-BHAGALA  
VALSAD - 396001

Ph (R): 54256 (PP)

A civil engineer with special interest in natural farming, he has not used chemical fertilisers or pesticides on his mango and coconut garden for the last 15 years. He uses cowdung and poultry manure. He also uses seaweed extract, pyramid water and magnetised water for his trees as well

## GUJARAT

as leguminous plants for nitrogen fixation. He had started using the above on an experimental basis but being impressed by the quantity, size and quality of the fruits, he has continued the practice.

(Source: personal communication, 1993)

DR. YAGNESH DESAI  
TREASURER  
NISARG SEVA  
MOHAN OPTICIANS  
AZAD CHOWK  
VALSAD - 396001

Ph: 02632-4246

Res: 'KRUPA'  
NEAR SARDAR NAGAR  
TITHAL ROAD  
VALSAD - 396001

Ph(R): 02632-53223

An optician from a naturopathy background, Desai was introduced to natural farming by L.V.Mehta, a 77 year old man belonging to Valsad. Desai has since taken to organic farming. He has a mango orchard with 250 trees and he also grows vegetables for home consumption. He uses earthworms and has nitrogen fixing trees to improve soil fertility. He has also started honeybee production. He uses biopesticides extracted by Ashok Shah alongwith self-prepared ones, which he prepares according to directions laid down by Gaby Stall in her book *Natural Crop Protection*.

NISARG SEVA was started to educate people about organic products. The organisation also markets products like unpolished rice, chemical free jaggery, unrefined sugar, vegetables etc. They have also initiated a programme of vermiculture and they provide training to farmers. They also run the *Shivambu Chikitsa Kendra* where they advise auto-urine therapy to patients suffering from chronic diseases like cancer etc.

(Source: personal communication, 1993)

DR. SHIRIN D. GADHIA AND DEEPAK N.GADHIA  
PLOT NO.86  
GIDC GUNDLAV PHASE I  
VALSAD - 396035

Shirin Gadhia developed the FARM (Farming with Appropriate Resource Management) method for dryland areas. She initiated organic agriculture experiments in Amod taluka in Gujarat with the local NGO 'PRAYAS'. She and her husband Deepak have promoted a local NGO called *Nisarg Seva* to propagate organic farming and marketing. They hold lectures and slide shows on agriculture and alternative energy sources. Deepak also promotes the Kufner stirling engine and the parabolic solar cooker. They are co-editors of IFOAM Asia Newsletter. They are in the process

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of starting an ecology centre called ICNEER - International Centre for Networking, Ecology, Education and Reintegration. The centre will have the main emphasis on networking, demonstration and promotion of organic farming, environmental rejuvenation and alternative energy and appropriate technology.

(Source: personal communication, 1993)

MR. ANIL K. GUPTA  
INDIAN INSTITUTE OF MANAGEMENT  
VASTRAPUR  
AHMEDABAD - 380015

Ph: 407241 Tlx: 121-6351 IIMA IN Fax: 91-272-427896  
Cable: INDINMAN E.Mail: anilg @ iimahd ernet in

A non-governmental organisation engaged in education, research, policy, documentation etc., it produces a newsletter on people's innovations called *The Honey Bee*. Is also involved in documenting experiences in organic agriculture. They have a large database on indigenous innovations by farmers. They have also set up SRISTI to network global research on the subject.

(Source: personal communication, 1993)

MR. BADRIBHAI JOSHI  
SECRETARY  
SHANTIGRAM NIRMAN MANDAL  
AT AND POST TANCHAA  
TALUK AMOD  
BHARUCH DISTRICT - 392025

A non-governmental organisation located in Amod Taluka of Bharuch district. Along with Manaviya Technology Forum, they promote appropriate technologies in 18 villages of Amod Taluka including the Gandhi Mela. Invigorating lectures are held during these melas. One such mela was based on the theme of 'Organic Farming' as a result of which several farmers volunteered land for on-field demonstrations on different organic farming techniques such as Fukuoka's mulching method, Mazibuko deep trench method, Save's platform and trench method, permaculture method and Shirin Gadhia's F.A.R.M. method. Badribhai himself is doing organic farming on one acre, using different methods. He also propagates the concept among other farmers through meetings, discussions etc.

(Source: personal communication, 1993)

MS. KUNDNIKA KAPADIA  
MANAGING TRUSTEE  
NANDIGRAM  
DHARAMPUR ROAD  
POST VANKAL  
VALSAD DISTRICT - 396007

Ph: 02632-87245

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This is a new institution. They grow rice, vegetables, wheat, groundnut, chickoo, mango etc. They use seaweed, pyramld water, herbal insecticides made from *sitafal* and tobacco leaves.

(Source: personal communication, 1993)

DR. (MRS.) SULBHA KHANNA  
U.G.C.RESEARCH ASSOCIATE  
DEPARTMENT OF GEOGRAPHY  
GUJARAT UNIVERSITY  
AHMEDABAD - 380007

Engaged in research and education, Sulbha Khanna's major interest is centred around locating indigeneous methods of cultivation which help promote organic agriculture. She is very concerned about the socio-economic and administrative problems of traditional farmers; the reasons behind why they could not continue with their age old wisdom and scientific techniques of agriculture. She has also worked on problems related to the introduction of commercial farming systems.

At present, she is involved in finding out different techniques of estimating the capability of land. She has authored several publications on the subject.

(Source: personal communication, 1993)

MR. KORAH MATHEN  
CHIEF EXECUTIVE  
LALBHAI GROUP RURAL DEVELOPMENT FUND  
ARVIND MILLS PREMISES  
NARODA ROAD  
AHMEDABAD - 380025

Ph: 336998, 374395 Tlx: 0121-6214 Fax: C/O 0272-371396  
Cable: ARVIMILLS

A post graduate from IIM, he has evolved and implemented programmes of the Arvind Mills Trust which undertake rural development. He established the Narottam Lalbhai Group Rural Development and the Lalbhai Group Rural Development Funds which he currently manages. He has also established the Institute of Science and Technology for Development (ISTD). He is an office bearer of several organisations in India which are involved in rural development. He is also in active contact with many international agencies like Greenpeace International, ILEIA, ELCI, PAN etc. He has been responsible for organising/conducting/attending a number of national and international seminars and conferences, especially on technology, genetic resources etc.

(Source: IFOAM Newsletter, December 1991)

MR. LABH SHANKAR MEHTA  
IREVA NIWAS  
HALER ROAD  
VALSAD - 396001

## GUJARAT

He is involved in activities related to research, documentation, education etc. He is also interested in organic agriculture. He participated in the World Nutrition Conference, Aurangabad. He has also worked on a pyramid in organic science, Poona.

(Source: personal communication, 1993)

MICHAEL AND SWATI  
JUNA MOZDA  
DEDIAPADA  
DISTRICT BHARUCH - 393040

Swati has worked with women's cooperatives and children with special reference to informal education. Michael has some experience in windmills and hand-spinning of cotton. They also work in the area of development and are concerned with issues related to health care, soil conservation, sustainable traditional organic farming practices and the study of traditional tools and implements. They also share traditional seeds with other organic farmers. They publish a bi-annual report.

(Source: personal communication, 1993)

MR. SHANKAR NARAYANAN  
PROGRAMME EXECUTIVE  
FORESTRY AND HUMAN RESOURCES DEVELOPMENT  
AGA KHAN RURAL SUPPORT PROGRAM  
CHOICE PREMISES  
SWASTIK CROSS ROADS  
NAVRANGPURA  
AHMEDABAD - 380009

Ph: 91-272-427729, 91-272-464730, 91-272-464157  
Tlx: 0121-6257 Fax: 91-272-464862 Cable: GRASSROOTS

AKRSP has taken the initiative in micronutrient deficient areas of Junagarh district of Gujarat and has encouraged farmers to take up activities like green manuring, biogas slurry composting, vermicomposting, Azolla culture application etc. Sustainable agricultural practices are emphasised in order to counter the excessive extraction of nutrients from the soil through unsustainable practices.

(Source: personal communication, 1993)

MR. PARAGAJI M. PATEL  
CHAIRMAN  
ASSOCIATION FOR PROPAGATION OF INDIGENOUS RESOURCES  
NIKORA  
DISTRICT BHARUCH - 392031

He has been involved in seminars and workshops on organic farming. Presented a paper on the subject at the national seminar in Udaipur. At present, he is also working for children and women

health.

(Source: personal communication, 1993)

MR. ASHOK RATHI  
MANAVIYA TECHNOLOGY FORUM  
25/8, GOKULNAGAR SOCIETY  
MAKARPURA ROAD  
VADODARA - 390009

Ph: 540717

Manaviya Technology Forum has propagated the concept of *Sajeev Kheti Prayogwadis* as a strategy for alternative development. Farmers practising conventional farming methods are motivated to also set up initially, an experimental organic farm on half or one acre of land, where no chemical fertilisers and pesticides are used. Mixed farming, use of mulch compost etc. is also encouraged.

The Forum works closely with grassroots NGOs. It's experts work in the fields of energy, soil, water management, sustainable agriculture, post harvest technologies and agroprocessing. They publish a quarterly magazine in Gujarati.

(Source: personal communication, 1993)

MR. BHASKAR HIRAJI SAVE  
C/O MR.SURESH B.SAVE  
SUNNY PIN INDUSTRIES  
C1-168, GIDC  
UMBERGAON - 396171  
VALSAD DISTRICT

Ph: 026354-2877

Res: KALPAVRUKSH VADI  
VILLAGE DEHERI  
VIA UMBERGAON  
VALSAD DISTRICT - 396170

Ph(R): 026354-2126

A former school teacher who started his farm 'Kalpavruksha' in South Gujarat, he has been practising natural farming for the last 30 years with considerable success. Over the years, he has found the cost of farming going down whereas his yields have gone up, with a bonus of better quality fruits and vegetables. He evolved a 'platform and trench' method of planting where large trees like coconuts, chikoo and mangoes stand at the centre of 16 ft. wide platforms. On either side of the platform are trenches. Between the big trees and trenches are medium life span trees like bananas and papayas. The trenches are filled with organic waste, leaves and branches from the orchard, where the earthworms convert it into nutrient rich humus. This method leads to his consuming even less water than the drip irrigation system. He is also getting an excellent yield of chikoo without any irrigation. He is also getting a high production of all crops without any cultivation.

Save is a member of the coordination committee set up recently to promote sustainable organic agriculture within the state of Gujarat. He has offered apprenticeship to young agricultural graduates for practical training in natural farming on his farm.

(Source: personal communication, 1993)

DR. ASHOK C. SHAH  
PARTNER  
MICROBIOLOGY / NATURAL AGRICULTURAL ACTIVITIES  
MEGHAVYL INDUSTRIES  
C1-B-904, GIDC GUNDLAV  
VIA VALSAD - 396035

Ph: 02632-82585

Res: 3, AMAR APARTMENTS  
OPP.SWARG ASHRAM  
TITHAL ROAD CROSS LANE  
VALSAD - 396001

Ph(R): 02632-3853

A qualified microbiologist, he is involved in commercialisation of biotechnology in the small scale industry in India. He has developed a plant extract named AGRIMOR, a plant growth stimulant. For the last four years he has also been involved in educating the farmers about the dangers of using pesticides and chemical fertilisers. He has to his credit, several papers on the subject.

(Source: personal communication, 1993)

MR. BALVANT M. SHAH  
DHOBIVAD  
VALSAD

He is involved in organic farming.

(Source: referred by Mr.Yagnesh Desai)

MR. KAPILKUMAR J. SHAH  
VINOBA ASHRAM  
GOTRI  
VADODARA - 390021

Ph: 0265-328463

He has co-authored a book entitled *Sajeev Kheti* in Gujarati and has written a number of articles and papers on organic farming. He has also conducted a number of seminars, group meetings of farmers and agricultural students and an exhibition on organic farming. He wants to establish a centre for organic farming to promote the concept among agricultural students and farmers by

## GUJARAT

extension, research and publications.

(Source: personal communication, 1993)

MR. DHIRENDRA SONEJI  
VILLAGE SAKAWA  
P.O.SAMARIYA  
VIA RAJPIPLA  
DISTRICT BHARUCH - 393145

His 2.75 acre farm has become self-sufficient in food grains, beans, rice and vegetables, without using any chemical fertiliser or pesticide. He also grows some fruit, oilseeds and fodder on his farm. He uses permaculture techniques as well as the platform and trench and mulching methods. He uses various energy sources like wind, solar, animal sources. He also has a workshop where agricultural implements are made, sold and serviced.

(Source: personal communication, 1993)

## HIMACHAL PRADESH

DR. K.K.R. BHARDWAJ  
PROJECT COORDINATOR  
DEPARTMENT OF MICROBIOLOGY  
HIMACHAL PRADESH KRISHI VISWAVIDYALAYA  
PALAMPUR - 176062

Ph: 2688

Res: 4/10, OLD RESIDENTIAL COLONY  
HIMACHAL PRADESH KRISHI VISWAVIDYALAYA  
PALAMPUR - 176062

Ph(R): 2645 (PP)

His field of specialisation is soil and environmental microbiology. He is working as Project Coordinator for the All India Coordinated Research Project on Microbiological Decomposition and Recycling of Wastes. This is a focal research project of IARI on organic farming and its related aspects. He teaches microbiology to postgraduate students. Has several papers and articles as well as a monograph on residue recycling and biodegradation, to his credit.

(Source: personal communication, 1993)

## JAMMU AND KASHMIR

MR. SONAM DAWA  
DIRECTOR  
LADAKH ECOLOGICAL DEVELOPMENT GROUP-LEDeG  
KARZOO, LEH  
LADAKH - 194101

Ph: 01982-3746 Fax: 01982-2484

LEDeG is a non-government organisation working to promote ecological and sustainable development which is in harmony with and builds on the traditional culture. Its activities include development and dissemination of various appropriate technologies like Trombe wall solar space heating units, solar water heating systems, solar ovens, hydraulic rams, improved water mills, micro-hydro installations etc., training in and development of traditional handicrafts, propagation of traditional organic farming and education and information on environmental problems. In recognition of its work, LEDeG was awarded the Right Livelihood Award, also known as the Alternative Nobel Prize in 1986 and the Inaugural Prize for sustainable and participatory development by the Danish Development organisation, Mellemlfolkligh Samvirke in 1989.

(Source: personal communication, 1993)

## KARNATAKA

MR. S. ANANDA  
PROJECT DIRECTOR  
KARNATAKA WELFARE SOCIETY  
P.O.BOX 28  
CHIKBALLAPUR - 562101

Ph: 08156-2486 Fax: 080-200016

KWALITY is engaged in activities related to environment, education, health, AIDS, women's development, training and agriculture as well as research and documentation. It is also one of the Earth Action Partner Organisations in India. In their intensive training programme in agriculture and allied fields for the rural youth, emphasis is laid on practices such as green manuring, greenleaf manuring and alley cropping to improve the fertility status and physical condition of the soil besides the yield.

S. Ananda has also participated in several national and international conferences/ <sup>for</sup> seminars/workshops.

(Source: personal communication, 1993)

## KARNATAKA

MR. G.S. AURORA  
PROFESSOR  
DEPARTMENT OF SOCIOLOGY  
INSTITUTE FOR SOCIAL AND ECONOMIC CHANGE  
NAGARBHAVI  
BANGALORE - 560072

Ph: 355519 Cable: ECOSOCI

Res: ISEC CAMPUS  
BLOCK 9, FLAT 4  
NAGARBHAVI  
BANGALORE - 560072

Ph (R): 303346

He organised the first Permaculture course at the University of Hyderabad in 1987. He practises organic roof gardening with wife Ira Aurora. He is also chairman of Permaculture, India and has attended many seminars and conferences on organic farming.

(Source: personal communication, 1993)

MR. K.V. BELIRAYA  
DIRECTOR  
SYNDICATE AGRICULTURE AND RURAL DEVELOPMENT FOUNDATION  
HIRIADKA - 576113

Ph: 08252-42338

Res: DARBUJE  
P.O.KADTHALA - 574108

He is working on the preparation and use of coconut fibre pith in composting.

(Source: personal communication, 1993)

MR. D.D. BHARAMAGOUDRA  
AT/PO YELAVATTI  
TALUKA SHIRAHATTI  
DHARWAD DISTRICT - 582117

He has been actively engaged in organic farming for the last six years. He grows jawar, wheat, pulses, chillies and cotton. He uses no chemicals and yet his crops are free from pests and diseases. He also visits other farmers to propagate the concept of organic farming. He has written a number of articles in Kannada. He is also on the faculty of 'KRISHNA KRISHI', which is an association for alternative agriculture.

(Source: personal communication, 1993)

## KARNATAKA

VIVEK AND JULIE CARIAPPA  
P.O.BIRWAL VILLAGE  
HEGGADA DEVANA KOTE TALUK  
MYSORE - 571121

They have a six acre farm which is undergoing natural regeneration with indigenous trees/plants. They have also been experimenting with and improving their farming techniques over the years. They use different means for conserving moisture and increasing soil strength and quality, for example, mulching, bunding, green-manure, compost, vermicompost and companion planting. They are presently helping tribals to shift to sustainable agriculture in this area. Also working on a practical seed collection programme where old seeds are not only stored but are grown/reproduced and given to other farmers.

(Source: personal communication, 1993)

MR. A.P. CHANDRASHEKHAR  
INDRAPRASTHA  
KALALAWADI VILLAGE  
POST UDBUR  
MYSORE - 570008

Ph(R): 77552

He has been practising organic farming since the last seven years and is growing various medicinal plants, fruit trees, flowers and vegetables. Uses earthworms to degrade biowaste. Also uses cowdung as manure. Has written a book and some articles on the subject.

(Source: personal communication, 1993)

MR. RAVI J. D'SOUZA  
ST.PAUL'S KALMANE  
COOVE POST  
MUDIGERE TALUK  
CHIKMAGALORE

He is involved in organic farming.

(Source: referred by Dr. Anand Titus Pereira)

MR. SHAM PA DAITOTA  
EDITOR  
SADASHAYA PRAKASHANA  
POST MUNDAJE  
TAL.BELTHANGADY - 574228  
DAKSHINA KANNADA DISTRICT

Res: PANAJE 574259  
DISTRICT DAKSHINA KANNADA

Ph(R): 08251-47229

## KARNATAKA

An organic farmer by profession, Daitota is also a resource person for various schools, colleges and NGOs conducting workshops, seminars etc. He also writes articles on environment protection and organic farming. Has authored books on herbal medicines, forest diseases, forest conservation, folk songs etc.

(Source: personal communication, 1993)

MR. JOHNSON E. DAVID  
DIRECTOR (ENVIRONMENT)  
DATA CENTRE FOR NATURAL RESOURCES  
WORLD WIDE FUND FOR NATURE-INDIA  
KAMALA MANSION  
143 INFANTRY ROAD  
BANGALORE - 560001

Ph: 573206

He has organised a number of seminars on natural farming, including the natural farming seminar held in Udaipur 1991. He has also presented papers on the subject including the following:

- i. *Conservation and Management of Living Resources* presented at the National Symposium in January 1990;
- ii. *Relative nutritional efficiency and toxicity of food produced with and without chemical inputs* February 1991,
- iii. *Pricing and marketing of organic foods in India* (ILEIA Newsletter 1990)
- iv. *Improvement of agro-ecosystems through alternative systems of agriculture*, January 1990.

He maintains, like several others, that farming without chemical inputs is healthy and economically viable and has a very positive effect on the quality of soil as well as farm products. The data centre collects, collates and indexes data on a wide range of subjects like energy, water, habitat, agriculture, wildlife, biotechnology and others.

(Source: personal communication, 1993)

DR. GADDI  
P.O. MALASAMUDRA  
GADAG  
DISTRICT DHARWAD

He is involved in organic farming.

(Source: referred by Mr. R.S. Patil)

## KARNATAKA

MR. S.A. KORI  
SERICULTURE EXTENSION OFFICER  
SERICULTURE DEPARTMENT  
GADAG - 582101  
DISTRICT DHARWAD

He is involved in organic farming.

(Source: referred by Mr. R.S. Patil)

MR. SANTOSH KOULAGI  
TRUSTEE  
JANPADA SEVA TRUST  
MELKOTE  
DISTRICT MANDYA - 571431

Ph: 08232-81454

He is working on a demonstration organic farm where he experiments with different cover crops. He has translated *One Straw Revolution* into Kannada. He is also involved with the rehabilitation of the handicapped. Has publications on organic/ natural farming to his credit.

(Source: personal communication, 1993)

MS. SHYAMALA KRISHNA  
COORDINATOR  
REGIONAL CELL (SOUTHERN REGION)  
CENTRE FOR ENVIRONMENTAL EDUCATION  
KAMALA MANSION  
143 INFANTRY ROAD  
BANGALORE - 560001

Ph: 080-568209 Fax: 080-568209

Res: NEW NO.101/105 (OLD NO.28/1)  
14'A'CROSS, 11TH MAIN  
MALLESWARAM  
BANGALORE 560 003

She is working on issues related to segregation of city garbage into organic and non-biodegradable matter and is also involved in experimenting with medium/large scale composting of organic matter thus segregated. Has several papers and talks on various topics including waste management and vermicomposting to her credit. Is coordinating several projects like environmental education bank, production of fuel and manure from human solid waste in an urban slum etc.

(Source: personal communication, 1993)

## KARNATAKA

MR. CASMIR MENEZES  
DIRECTOR  
AGRICULTURE, PLANNING, TRAINING  
DHARMASTALA RURAL DEVELOPMENT PROJECT  
DHARMASTALA, RATNAMANASA  
UJIRE - 574240  
DAKSHIN KANNADA

Ph: 08256-22244

Res: CHURCH ROAD  
BELTHANPADY  
DAKSHIN KANNADA - 574214

He has been involved in pepper cultivation for nearly 10 years. Having seen that vermicastings give good results in controlling quick-will disease of black pepper, he has not had to use any chemical fertilisers or fungicides. His plants have not been struck with any major disease and the yield has also been good. Also does earthworm cultivation and recycling of waste. A number of articles have been written on the subject.

*(Source: personal communication, 1993)*

MR. PADRE  
ADIKE PATRIKE  
P.O. BOX 29  
YELMUDI  
PUTTUR  
DAKSHIN KANNAD

He is involved in organic farming.

*(Source: referred by Mr.R.S.Patil)*

MR. R.S. PATIL  
SECRETARY  
DHARITRI  
'SHIVA'  
BEHIND PRASAD LODGE  
GADAG - 582101

Ph: 08372-7536

Dharitri was formed in 1989 and today has 35 members, who meet once every one to two months to share experiences in pest control, organic farming and other sustainable methods of agriculture. They also invite other people and visit other farms once a year. The members also participate in the annual local fair to propagate organic farming methods. They have also started giving organic produce to consumers on request.

## KARNATAKA

Patil has written articles in local agricultural magazines, on sustainable agriculture and environment.

*(Source: personal communication, 1993)*

DR. ANAND THUS PEREIRA  
COFFEE PLANTER  
DEPARTMENT OF AGRICULTURAL MICROBIOLOGY  
UNIVERSITY OF AGRICULTURAL SCIENCES  
GKVK CAMPUS  
BANGALORE - 560065

Res: ANAND ESTATE  
SUNDEKERE POST  
VIA SAKLASPUR  
HASSAN DISTRICT - 573134

Ph(R): 08173-2329

He has a 200 acre farm on which he grows coffee, cardamum, pepper, citrus and paddy. Has done extensive work on biological nitrogen fixation and has held various demonstration trials on the safe use of organic manures. Has several published papers to his credit. Has used Azolla extensively in his rice paddies as a fertiliser, mulcher and weed suppressant. Presently he is conducting extensive trials on the use of traditional rice varieties.

*(Source: personal communication, 1993)*

MR. PURUSHOTTAM RAO  
P.O. TIRTHAHALLI  
SHIMOGA

He is involved in organic farming.

*(Source: referred by Mr.R.S.Patil)*

MR. L.NARAYANA REDDY  
VILLAGE SORAHANASE  
P.O. VARTHUR  
BANGALORE - 560087

On his 3.5 acres of land, Reddy uses only organic fertilisers and herbal extracts for pest control. gobargas as fuel for cooking, cattle, sheep, chicken dung for compost manure. Allied activities include sericulture, nursery, orchard crops like coconut, guava, chikoo, banana, coffee etc. fodder production etc. He has also acted as a resource person at many seminars conducted by the promoters of organic farming. Groups of farmers and students from India and abroad visit his farm regularly.

*(Source: personal communication, 1993)*

MR. M.S. SATHYANARAYANA  
MAGSAN FARM  
KUKKIJADKA POST  
SULLIA TALUK - 574212  
DAKSHIN KANNADA

Ph: 08257-74228

He started the Rural Milk Society in 1978. He is currently working on the production of energy from waste in Sri Dharmasthala Manjunateswara temple under D. Veerendra Heggde.

(Source: personal communication, 1993)

MR. M.T. SHANTIMOOLE  
CONVENOR  
TEACHER OF BEE-KEEPING  
SAVAYAVA FARMERS FORUM FOR NEW AGRICULTURE  
POST KUKKIJADKA  
SULLIA TALUK - 574212  
DAKSHIN KANNADA

Res: POST PAILAR  
VIA DODDATHOTA  
SULLIA TALUK  
DAKSHIN KANNADA - 574248

She has been working on organic farming issues at the state level by linking farmers clubs and associations and at the school level, in the high schools of her taluk. She is also involved in research work in organic pest control especially fungi control in pepper.

(Source: personal communication, 1993)

DR.(MRS) SHAKUNTALA SRIDHARA  
ASSOCIATE PROFESSOR  
ALL INDIA COORDINATED RESEARCH PROJECT ON RODENT CONTROL  
COLLEGE OF BASIC SCIENCES AND HUMANITIES  
UNIVERSITY OF AGRICULTURAL SCIENCES  
GKVK CAMPUS  
BANGALORE - 560065

Ph: 330153 Extn.238/226 Tlx: 0845-8393 UASK IN  
Cable: UNIVAGRIS

Res: C-25, UAS STAFF QUARTERS  
HEBBAL  
BANGALORE - 560024

Her specialisation is pest control. She has been advocating minimum or non-use of pesticides by using plant derived alternatives, management of pests based on their behaviour and cultural practices. The forums that she taps range from farmer meetings to national and international scientific meetings/ seminars/ symposia and conferences. Has several publications on the subject, to her credit.

(Source: personal communication, 1993)

MR. K.P. SURESH  
KANJARPANE HOUSE  
POST PAILAR  
SULLIA TALUK  
DAKSHIN KANNADA DISTRICT - 574248

Ph(R): 74272

A farmer who practises organic farming, he is also a free lance agricultural journalist. He has coauthored a handbook on organic farming in Kannada and has several articles to his credit which have been published in various Kannada magazines. He is also interested in low cost housing and environmental regeneration. He helped found 'Savayava' which is a farmer's forum for organic farming.

(Source: personal communication, 1993)

MR. PRADEEP B. TAPAS  
RUDSET INSTITUTE  
RUDSET VIDYAGIRI  
DHARWAD - 580004

A non-governmental organisation involved in education and networking. Is also interested in organic agriculture.

(Source: IFOAM Newsletter, December 1991)

MR. R. THIMMAREDDY  
EXECUTIVE DIRECTOR  
RURAL DEVELOPMENT AND ENVIRONMENTAL EDUCATION  
BANGALORE INTEGRATED RURAL DEVELOPMENT SOCIETY-BIRDS  
CHANDAPURA P.O.  
BANGALORE - 562145

Ph: 080-422359

A non-governmental organisation involved in rural development, environmental education and information exchange. Is also interested in organic agriculture and sustainable development.

(Source: personal communication, 1993)

## KERALA

FR. M.FRANCIS ACHARYA  
PRESIDENT  
KURISHIMALA ASHRAM  
VAGAMON - 685503  
KOTTAYAM DISTRICT

He is the leader of a monastic community dedicated to worship, meditation and social uplift. Has transformed 200 acres of rocky wastelands into pastures for high yielding cows, using only organic manure-cowdung and slurry irrigation. They use cowdung gas as fuel for community use. Has also initiated about a 100 families into the same practices.

(Source: personal communication, 1993)

MR. V.S. CHAMUNNI  
PADINJANTINPURAM  
P.O.ERIMAYUR  
VIA ALATHUR  
PALGHAT

He is actively involved in organic farming.

(Source: IFOAM Newsletter, December 1991)

GOPALAKRISHNAN AND VIJAYALAKSHMI  
SARANG  
P.O. AGALI-CHITTOOR  
PALAKKAD DISTRICT - 678581

Gopalakrishnan and Vijayalakshmi have been practising natural farming for over ten years in their farm in Attappedy - a region where most farms are on hillsides where every year tons of top soil gets eroded after ploughing - irrigation and erosion are major problems in Attappedy. They have, after a couple of experiments, started organic farming by broadcasting cowpeas among healthy weeds. They then cut the weeds and covered the seeds with them. They found that by covering their farmland with mulch, the soil remained loose and moist, hence mitigating the need for irrigation and ploughing. Decayed mulch, in turn enriched the soil every year and they have been able to check soil erosion totally. They have also controlled the runoff by natural methods. Their farm is part of a larger ecosystem comprising a watershed and a forest. The trees serve as wind protectors and help in the making of natural manure from bird droppings. Besides, layered growth in the surrounding forest area prevents rain water from seeping over into the soil and flooding the crops. They are also involved with activities like education, documentation and networking.

(Source: personal communication, 1993)

## KERALA

DR. R. GOPIMONY  
PROFESSOR  
PLANT BREEDING AND GENETICS  
COLLEGE OF AGRICULTURE  
VELLAYANI  
THIRUVANANTHAPURAM - 695522

Ph: 73021

Res: ANJALI  
TC-2/1887, GOUREESAPATTOM  
THIRUVANANTHAPURAM

Ph(R): 443394

He is trained in seed production and research management. Has done on-farm trials on organic farming in coconut gardening. Is implementing a research project on the impact of sustainable farming practices on soil properties and crop productivity. Has written over 300 articles and 16 books on agricultural topics.

(Source: personal communication, 1993)

MR. JOHN C. JACOB  
AMRUTHAM HOME FOR HARMONIOUS LIVING  
P.O.SHOLAPUR  
VIA AGALI  
PALAKKAD DISTRICT - 678581

A retired college teacher, he is now involved with organic farming. He holds short term courses in organic farming, vedanta and harmonious living as well as camps on nature education. Also edits the magazine *Ankh*, the only monthly in Malayalam dedicated to conservation education.

(Source: IFOAM Newsletter, December 1991 and personal communication, 1993)

MR. P.K. KURIEN  
PROJECT OFFICER  
MALANADU DEVELOPMENT SOCIETY  
KANJIRAPALLY - 686507  
KOTTAYAM DISTRICT

Ph: 04828-2718, 04828-2756, 04828-3356  
Fax: 91-4828-3356

He is actively involved in organic farming.

(Source: personal communication, 1993)

MR. S. PRABHU  
SCIENTIST  
AGRICULTURAL MICROBIOLOGY  
CENTRAL PLANTATION CROPS RESEARCH INSTITUTE  
KUDLU P.O.  
KASARAGOD - 671124

Ph: 20094-225

Res: 4/803 NEAR KARIPPALAM  
NORTH CHERLAI  
COCHIN 682 002

Ph(R): 227810

He is involved in research activities. His areas of interest include root-associated nitrogen fixation in crop plants and use of diazotrophs such as azospirillum spp. as biofertilisers; organic recycling in crop production-green manures, mulches etc.; conservation of traditional varieties of crops. Is presently in the process of developing a biofertiliser for coconut. Has written a couple of articles on the subject.

(Source: personal communication, 1993)

MR. R. PRAKASH  
ASSOCIATE PROFESSOR  
COLLEGE OF AGRICULTURE  
VELLAYANI P.O.  
THIRUVANANTHAPURAM - 695522

Ph: VIZHINJAM 573

Res: 25 'BHAVANI'  
SANTOSH NAGAR  
P.O.MUTTADA  
THIRUVANANTHAPURAM

Ph(R): 438488

He has worked on composting city (organic) wastes for use in vegetables, banana and coconut cultivation. Has published eight research papers, 55 technical articles and a book.

(Source: personal communication, 1993)

MR.P.K.THAMPAN  
PRESIDENT  
AGRICULTURE AND RURAL DEVELOPMENT  
PEEKAY TREE CROPS DEVELOPMENT FOUNDATION

MIG 141  
GANDHI NAGAR  
KOCHI - 682020

Ph: 319271

Thampan is a tree farmer practising agroforestry. He is involved in disseminating information on alternative farming systems among farmers through publications, field visits and participation in seminars and workshops. Publishes a monthly entitled *Tree World*. Has published over a dozen books on agriculture related topics as well as over a 100 pamphlets, papers and articles.

(Source: personal communication, 1993)

MR. GEORGE THOMAS  
SIDA  
KOOVAPPALLY  
KOTTAYAM DISTRICT - 686518

A non-government organisation involved in networking. It is the ILEIA contact in India. Is also interested in organic agriculture.

(Source: IFOAM Newsletter, December 1991)

DR. THOMAS VERGHESE  
PROFESSOR  
AGRICULTURAL CHEMISTRY AND SOIL SCIENCE  
COLLEGE OF AGRICULTURE  
VELLAYANI  
THIRUVANANTHAPURAM - 695522

He is involved in organic farming.

(Source: referred by Dr.R.Gopinomy)

MR. K. VISWANATHAN  
DIRECTOR  
MITRA NIKETAN  
MITRANIKETAN POST  
VELLANAD  
THIRUVANANTHAPURAM - 695543

Ph: 47288-2045, 47288-2015, 47288-2086

Fax: 91-471-446859

Mitra Niketan endeavours to practise the ideal of community-centred education in an education-centred community and has, as its objective, the total development of man and through him, the society.

## KERALA

Several activities are to be found in the various units within the campus including schools, apiculture and mushroom culture units, a science and technology centre, a printing and publishing centre, a handicraft development centre, a centre for community health care and education, animal science, a sericulture pilot project, agro-social forestry, inland fisheries unit etc. CERID - Centre for Education, Research, Innovation and Development, coordinates all the activities of the various units of Mitra Niketan.

Viswanathan took the initiative to organise a number of cooperatives in the Trivandrum district. He is a consultant to voluntary bodies involved in integrated development at the state, national and international level.

(Source: personal communication, 1993)

## MADHYA PRADESH

MR. SHREESHAIL CHITWADGI  
EXECUTIVE DIRECTOR  
BHARAT FORESTRY CONSULTANCY  
156/A, INDRAPURI  
BHOPAL - 462021

Ph: 546586

A retired Conservator of Forests, he now advises farmers on agro-forestry, farm forestry and organic farming. Also helps farmers to get institutional financing for agroforestry and farm forestry. Currently he is working as a forestry consultant with NABARD and an agricultural finance consultant with the Manganese Ore (India) Ltd. He has contributed a number of articles to local papers and journals on problems connected with forestry and environment. He is also a contact person for ILEIA as well as consultant to the Gorakhpur Environmental Action Group. Has presented several papers on forestry in national and international fora.

(Source: personal communication, 1993)

MR. J.V.S. CHOUDHERY  
MANAGER  
KASTURBAGRAM KRISHI KSHETRA  
P.O. KASTURBAGRAM  
INDORE - 452020

Spread over 100 hectares of cultivable land, Kasturbagram has been practising organic farming for more than a decade. It has 46 hectares of silvipastoral land and 26 hectares under agroforestry and horticultural programmes with tropical fruit plants of various varieties. Farm, home and animal wastes are recycled. They also practise biological control of pests and use organic manure. The energy complex has solar appliances as also biogas plants, wind mills etc. They hold exhibitions, train farmers and arrange workshops, seminars and conferences. The Krishi Kshetra has been receiving awards almost every other year including the Lal Bahadur Shastri Award for

## MADHYA PRADESH

Progressive Farmer in 1988.

(Source: personal communication, 1993)

MR. RAKESH DIWAN  
VIKALP  
KASERA MOHALLA  
HOSHANGABAD - 461002

Vikalp is a group of people who are engaged in organic agriculture. It runs on the philosophy that farming is not just a process of producing food but a cooperative interaction with nature. They are of the opinion that through a harmonious non-exploitative interaction, the produce from the farms will not only be adequate but in surplus.

(Source: IFOAM Newsletter, December 1991 and Moving Technology, February 1991)

→ Website: ipma Diwan (Refer details)

MR. T.G.K. MENON  
8 SAMVAD NAGAR  
INDORE - 452001

Ph(R): 0731-461875

He has been practising organic farming for the last 16 years at Kasturbagram. He has also organised several fairs, exhibitions, essay competitions, seminars and conferences. He is the recipient of many awards like the Padmashri, Jamnalal Bajaj Award, Lal Bahadur Shastri Memorial Award and the Indira Priyadarshini Vriksha Mitra Award. Has several publications to his credit including *Flora of Kasturbagram* and *Our Agricultural Policy*. He is associated with several social and educational institutions in Madhya Pradesh and is working on promotion of biodynamic agriculture in Indore.

(Source: personal communication, 1993)

AZIZ D. AND RAAIHANA PABANEY  
JOINT COORDINATORS  
FRIENDS RURAL CENTRE  
RASULIA  
HOSHANGABAD - 461001

In 1980 inspired by Fukuoka's book *The One Straw Revolution*, Aziz and Raaihana started an experiment in natural farming. The first step in the programme called *Rishi Kheti* or regenerative agriculture, was to abolish the use of artificial fertilisers and pesticides. Soon after, they got rid of their tractor and limited the amount of cultivation. Some area was set aside where no cultivation at all was done and the land was left undisturbed for the worms, insects and bacteria to work on. They steadily increased the variety of crops, undertook multiple cropping and tried out various rotations and methods for natural control of weeds. They have found that as the soil and natural balance improved, the quality and quantity of yield also went up.

(Source: FRC Report, 1987 and personal communication, 1989)

## MADHYA PRADESH

MR. G.V. PATANKAR  
P.O. RONDHA  
GRAM SWARAJYA ASHRAM  
VILLAGE KARAJAGAON  
BETUL DISTRICT - 460002

Ph(R): 342

On the 15 acres comprising his farm, Patankar has set up a basic education school. He is a strong supporter of Khadi and village industries. He has been an ardent advocate of organic farming all his life. On his own land, he has never used chemicals. He is actively involved in the cow-protection campaign initiated by Vinoba Bhave and has learned and practised various efficient compost making techniques.

(Source: personal communication, 1993)

THE DIRECTOR  
RAMAKRISHNA MISSION VIVEKANANDA ASHRAM  
ABUJHMARH, RURAL DEVELOPMENT PROJECT  
RAIPUR - 492001

Inaugurated in 1986, the Ramakrishna Mission Vivekananda Ashram was set up with the aim of training tribal youth and building up a band of multipurpose workers. Apprentices are trained in various trades like carpentry, agriculture-cum-horticulture, dairy, bee-keeping, bamboo work, first-aid etc. An agriculture demonstration-cum-training farm has also been added to their services where they give training to the tribals of the area.

(Source: IFOAM Newsletter, December 1991)

DR. R.H. RICHHARIA  
JAISHREE  
B-1, PUNJABI BAGH  
GOVINDAPURA  
BHOPAL - 462023

He worked with Dr. Pratap Aggarwal on the Rasulia farms. He is an international authority on rice, especially indigenous rice varieties. Has several scientific papers to his credit. Is also involved in education and research besides being engaged in organic agriculture.

(Source: IFOAM Newsletter, December 1991)

RAJU AND SHALINI TITUS  
TITUS FARM HOUSE  
BHOPAL ROAD  
HOSHANGABAD - 461001

After 22 years of modern methods of agriculture and dairying, they have for the past few years taken to natural farming and are delighted with the results. They have cut down on inputs and

## MADHYA PRADESH

labour, as well as on the cost of hybrid seeds and costly pesticides. They follow Fukuoka's method of 'Do nothing' farming. All stalks of crops are returned to the fields for mulching. Over the last few years, the soil fertility has improved considerably. At present, they use sprinklers for light irrigation but as the land improves there is progressively less need for irrigation.

(Source: personal communication, 1993)

## MAHARASHTRA

MR. SHIV NARAYAN ADHAO  
COORDINATOR  
RUSHI KHETI PRAKALPA JAGAR SOCIETY  
AT/PO SHENDURJANA GHAT  
TEHSIL WARUD  
AMRAVATI - 444907

He is engaged in farming, the organic way and is involved with all aspects of natural farming like compost making, integrated energy management, watershed management and natural pest control. Has also worked at the Friends Rural Centre for two years. Has written articles on the subject as well.

(Source: personal communication, 1993)

MR. SHAHID ALI  
BOMBAY NATURAL HISTORY SOCIETY  
HORNBILL HOUSE  
MUSEUM COMPOUND  
SHAHID BHAGAT SINGH ROAD  
BOMBAY - 400023

He presented a paper at a seminar on Biological Control of Pests in 1989 where he talked about birds as control agents of pests. According to him most of the bird damage to crops was due to monoculture. He also feels that snakes could be valuable for rodent control as shown by the successes of the Madras Snake Park Trust.

(Source: Science for Villages, 1989)

MR. GAJANAN AMDABADKAR  
AT/PO LADEGAON  
TAL. KARANJA LAD  
DISTRICT AKOLA

He has been actively involved in organic farming since the last two years with good results. He has also arranged camps on watershed management and natural farming.

(Source: personal communication, 1993)

MR. ASHOK BANG  
DIRECTOR  
CHETNA VIKAS  
P.O.GOPURI  
WARDHA - 442001

Ph: 07152-3806 Cable: WARDHA

Ashok Bang presented a paper at the organic farming convention in 1984 in which he described the practical efforts made by Chetna Vikas to eliminate chemical farming and revert to local resources. They have tried to involve the whole village into making compost cooperatively in a more scientific way. Their efforts have succeeded in about 20 villages. They also conduct action-research, demonstration, studies, training, extension programmes etc. on topics related to ecologically sound agriculture. They create audio-visual materials on issues like environment, ecologically sound agricultural practices, water scarcity etc. They are also involved in community organisation in rural areas especially of the rural poor, including women.

(Source: personal communication, 1993)

MR. P.D. BAPHNA  
DAHANU  
THANE DISTRICT - 401601

Ph(R): 22341, 22351

He is a horticulturalist who has received the Maharashtra state award, *Krishi Bhushan* for being one of the most progressive and innovative farmers in the state. His farm, which consists of about 55 acres, employs 25 farm workers. 90-95 percent of the trees grown are *chikoo* (Sapota) trees. His plantation of *chikoo* trees had been slowly dying after 22 years of chemical agriculture. After shifting to organic farming in 1978, his yield has improved as also the quality of fruit. He mulches the ground around the trees thickly with leaves and organic matter and uses only ayurvedic fertilisers or an organic soil conditioner which is a mixture of herbs and other plant matter. He uses the drip irrigation system on his farm in a big way. He is also involved in education and research activities.

(Source: personal communication, 1993)

MR. MAHESHBHAI BHANSALI  
MANAGING TRUSTEE  
BHANSALI TRUST  
640, PANCHRATNA  
OPERA HOUSE  
BOMBAY - 400004

Ph: 3632225, 3639125 Cable: COBANSALI

Res: BHANSALI TRUST  
HIGHWAY  
RADHANPUR - 385340  
DISTRICT BANASKANTHA

Ph(R); 02746-352, 02746-231

He has been involved in rural development activities in Banaskantha district since the last 25 years. He organises camps and meetings to increase awareness among farmers in the field of organic farming. He also motivates farmers to do experimental farming in an acre of their land.

(Source: Personal communication, 1993)

MR. U.S. BHAWALKAR  
BHAWALKAR EARTHWORM RESEARCH INSTITUTE  
A/3, KALYANI  
PUNE-SATARA ROAD  
OPP.HOTEL SHAKUN  
PUNE - 411037

Ph: 0212-443714 Tlx: 0145-7333 MCCI IN

Fax: 0212-444253

The Bhawalkar Earthworm Research Institute which is involved in research and education is also engaged in organic agriculture. In-order to ensure a steady and reliable supply of vermicastings for the farmers, the Institute has developed technology packages for setting up waste management units. Vermiculture biotechnology is used to convert organic, solid and liquid wastes emanating from the cities and the agro-processing units into vermicastings, simultaneously solving the problem of pollution in these places.

(Source: personal communication, 1993)

PROF. M.R. BHIDAY  
DIRECTOR  
INSTITUTE OF NATURAL ORGANIC AGRICULTURE - INORA  
100 KALPANA APARTMENTS  
OFF DR.KETKAR ROAD  
ERANDWAN  
PUNE - 411004

Ph: 0212-336216

He has developed a wormi-compost technology for organic agriculture. This technology is transferred to the farmers through a network of 20 INORA centres throughout India. Video instructional cassettes, developed in the local languages are also used for this process. Bhiday has published two books, one in Marathi and the other in English; a booklet for schools through NCERT, eight papers and articles. He has also been promoting the concept of city-farming wherein every flat or house owner produces his own requirement of fruits and vegetables organically.

He has also developed a technology to deal with both garbage disposal as well as disposal of industrial waste. This technology uses the system design of thermophilic disintegration, decomposition in a bio-gas system, bio-conversion in the earthworm gut and recycling water.

(Source: personal communication, 1993)

MR. RAVINDRA BHOLE  
 PROPRIETOR  
 BIOGENIK SYSTEMS  
 9, DEEPA  
 MALVIYA ROAD  
 BOMBAY - 400057

Ph: 6148267

They are involved in vermiculture. They make breeder boxes of earthworms which farmers can use to make vermicompost.

(Source: personal communication, 1993)

MR. VASANT RAO BOMBATKAR  
 SECRETARY  
 AKHIL BHARAT KRISHI GO-SEVA SANGH  
 POST GOPURI  
 WARDHA DISTRICT - 442114

Ph: SEVAGRAM 8461

Res: GITAI NAGAR  
 POST GOPURI  
 WARDHA - 442001

Ph(R): 2091

He has practical experience in farming, cow-keeping and manure making. Has written a book on compost making. Is editor of a monthly titled *Gograss*. Has started a movement against fertilisers and pesticides and organised camps in different provinces.

(Source: personal communication, 1993)

THE DIRECTOR  
 CENTRE FOR APPLIED SYSTEMS ANALYSIS IN DEVELOPMENT-CASAD  
 GANESH KUTIR, 1ST FLOOR  
 68 PRARTHANA SAMAJ ROAD  
 VILE PARLE (EAST)  
 BOMBAY - 400057

CASAD is working on land, water and productivity. A small earthen dam has been made by a low cost technique evolved by Datye. Equitable distribution of water to the fields is done through pipes. They have also done studies on indigenously developed agricultural practices, better composting methods and optimum water inputs.

(Source: IFOAM Newsletter, December 1991)

MR. HAL CHRISTIAN  
 29 EBENEZER  
 NAHUR ROAD  
 MULUND (WEST)  
 BOMBAY - 400080

Ph(R): 5615743

He runs the Sharon Farm at Sanjan, district Bulsar in Gujarat. Out of the 20 acres which comprise the farm, four are under cultivation of mango, guava, vegetables, rice and pulses. Christian employs the principles of permaculture, that is, free running chickens, intermingling of appropriate vegetables for pest resistance and better growth. They have surplus land and are open to suggestions for its economic utilisation.

(Source: personal communication, 1993)

MR. JOHN D'SOUZA  
 CENTRE FOR EDUCATION AND DOCUMENTATION  
 3, SULEMAN CHAMBERS  
 4, BATTERY STREET  
 BOMBAY - 400039

Ph: 2020019

They organise meetings and workshops on permaculture and organic farming. They are primarily an information and documentation centre.

(Source: personal communication, 1993)

MR. SHRIPAL ACHYUT DABHOLKAR  
 PRAYOG PARIWAR  
 103 SALOKHE NAGAR  
 KOLHAPUR - 416007

Ph(R): 0231-20371

He undertook the task of educating farmers through demystification of science, adopting innovative non-formal methods of knowledge communication. He started his research and experimentation with grape cultivation in Tasgaon in Sangli district of Maharashtra. Soon the productivity in the district rose to world standards. He then successfully extended his applied research to other fruit crops as well. He was awarded the Jamunlal Bajaj Award for application of science and technology to rural development. At present, he is experimenting with making a small plot of land of 10,000 sq. feet, a viable holding for a rural family of 4-5 persons. He has several books and articles on nature farming, to his credit. He has also received the Vasant Rao Naik Pratishthan Award for his agricultural research.

(Source: personal communication, 1993)

MR. K.R. DATEY  
CENTRE OF SCIENCE FOR VILLAGES  
MAGAN SANGRAHALYA DATTAPUR  
WARDHA - 442001

The Centre aims to provide a link between technicians and scientists on the one hand and the local, rural populace on the other, so as to make available to them, solutions to the rural problems which are appropriate for the local needs. The Centre is also involved in activities like education, research and documentation. Mr. Datey, along with Dr. Kate, had conducted an investigation on the Study of biomass productivity under non-chemical agriculture. This study of agricultural techniques by natural methods was carried out for the benefit of the rural poor and marginal farmers fighting hard to survive under rainfed conditions.

(Source: IFOAM Newsletter, December 1991)

MR. VASANT N. DESHPANDE  
CONSULTANT  
YERALA PROJECTS SOCIETY  
YERALA BHAWAN  
VISHRAMBAG  
SANGLI - 416415

Ph: 0233-340318 Tlx: 0193-216 RAJA IN  
Fax: 0233-76796

Res: 2, ROHIT APARTMENTS  
SOUTH OF MALU HIGH SCHOOL  
SANGLI - 416416

Ph(R): 0233-73796

He is involved in horticulture planting without use of chemical fertilisers and insecticides; wormiculture; composting and the use of lime and leaf juices for insect control. Also engaged in dissemination of information on organic farming especially horticulture.

(Source: personal communication, 1993)

DR. UPMA DIWAN  
SATPURA INTEGRATED RURAL DEVELOPMENT INSTITUTE-SIRDI  
BAHIRAM KARANJA  
CHANDUR BAZAR  
AMRAVATI

He is involved in organic farming.  
(Source: referred by Dr. (Mrs) Sulbha Khanna)

*Transfer  
to Madhya Pradesh*

DR. R.T. DOSHI  
INSTITUTE OF NATURAL ORGANIC AGRICULTURE  
"JAMUNOTRY"  
26TH ROAD, BANDRA (W)  
BOMBAY - 400050

Ph: 6401439 Fax: 022-6432174

A doctorate in agricultural economics, he has been the founder chairman of companies manufacturing and marketing agro-inputs and agro-industry equipments. He is the recipient of the *Padmashri* award. Since his retirement from active business in 1984, he has been experimenting on City Farming. He has developed a methodology to produce vegetables and fruits in urban areas on concrete terraces and balconies by using domestic waste. Under his guidance, the Marathi Vigyan Parishad started the City Farming Institute for education, demonstration etc. for the benefit of urban city populace.

He is also the president of INORA - Institute of Natural Organic Agriculture. This Institute is devoted to sustainable organic agriculture. It conducts educational and research-cum-demonstration programmes.

(Source: personal communication, 1993)

VASANT AND KARUNA FUTANE  
SANWAD  
VILLAGE RAWALA  
P.O. SATNOOR  
TEHSIL WARUD  
AMRAVATI DISTRICT - 444907

Ph: 4071

Since 1983, they are working on the regeneration of six acres of barren land. In one acre, they practise no-tillage farming and in the other five acres they do minimum tillage. The non-usage of chemicals has proved to be quite beneficial with their yield being as good as that of other farmers and in some cases, even more. Crop rotation has not only regenerated the soil but also decreased the incidence of disease. They also arrange camps and slide shows for school boys as well as meetings and camps for farmers. Their focus, at present, is watershed management. They also write on the subject.

(Source: personal communication, 1993)

THE DIRECTOR  
GANDHI BASIC EDUCATION COUNCIL  
SEVAGRAM  
WARDHA

They intend to set-up an eco-biological park which will also include mushroom culture, aquaculture, harvesting herbal and medicinal plants using funds from various state and central

organisations like the department of fisheries, social forestry, department of non-conventional energy sources and the Zila Parishad of Wardha.

(Source: IFOAM Newsletter, December 1991)

MR. KANAKMAL GANDHI  
SECRETARY  
NAI TALIM SAMITI  
SEVAGRAM ASHRAM  
WARDHA - 442102

Ph: 3526, 8461

Res: SARVASEVA SANGH  
MAHADEVBHAI BHAVAN  
SEVAGRAM - 442102

Ph(R): 2527

He has been practising organic gardening since 15 years. He introduced organic farming at Sevagram and other institutions in Wardha. Has written six books on various aspects of organic farming. Is also a member of 'Samvardhan' based in Ahmedabad, Gujarat.

(Source: personal communication, 1993)

MS. GANGALAXMI B.  
KHETI GOSHALA  
BRAHM VIDYA MANDIR ASHRAM  
P.O.PAVNAR  
WARDHA DISTRICT - 442111

Ph: 07152-3518

A non-governmental organisation involved in education and documentation as well as organic farming.

(Source: personal communication, 1993)

DR. MADUKAR NAMDEORAO GUMBLE  
DIRECTOR  
APEKSHA HOMEIO SOCIETY  
AT/PO GRUKUNJ MOZARI  
TAL.TEOSA  
DISTRICT AMRAVATI - 444902

Ph: 86240 Cable: HOMEIO

He is involved in organic farming.

(Source: personal communication, 1993)

DR. SURYA GUNJAL  
ASSOCIATE PROFESSOR AND HEAD  
SCHOOL OF AGRICULTURAL SCIENCES  
YASHWANTRAO CHAVAN MAHARASHTRA OPEN UNIVERSITY  
COLLEGE ROAD  
NASIK - 422005

Ph: 0253-70060, 0253-77322, 0253-77296

Fax: 91-253-77244

Res: PARNAKUTI  
NEAR ST COLONY  
GANGAPUR ROAD  
NASIK - 422005

He has been involved in the development of training programmes on organic farming, watershed development, agroforestry, biofertilisers etc. Has authored five books on various topics like agroforestry management, plant protection and fruit and vegetable processing. Has written several research articles on several topics including organic farming and earthworm farming.

(Source: personal communication, 1993)

DR. NARAYAN G. HEGDE  
EXECUTIVE VICE PRESIDENT  
BAIF DEVELOPMENT RESEARCH FOUNDATION  
'KAMDHENU'  
SENAPATI BAPAT MARG  
PUNE - 411016

Ph: 342621, 342466 Tlx: 0145-7283

Fax: 0212-670859 Cable: BAIFON

Res: ASHIRWAD  
1105/9-2, OFF HARE KRISHNA  
MANDIR PATH  
PUNE - 411016

Ph(R): 349342

He is involved in research, extension, training, organic chemicals and project administration. Has been involved in the promotion of *neem* as a pesticide and fertiliser substitute as well as promotion of green manure and earthworms to improve soil fertility and reduce the agro-chemical load on agriculture and forestry. Has written articles on the subject. Also writes for children. Has received an award for his story book for children on 'Mother Nature'.

(Source: personal communication, 1993)

## MAHARASHTRA

VISHWAS AND SHEELATAI KACHARE  
TELANGWADI (SHETOHAL)  
SOLAPUR DISTRICT

On 25 acres of land, they do not use any chemicals. They have prepared a compost pit wormery for raising earthworms. They use farm waste as manure. They have dug a well and for optimum use they have introduced drip irrigation system. The average income from promegranates per acre is Rs.50,000 and they also export ber fruits.

(Source: *Moving Technology*, February 1991)

MR. JANARDHAN CHINKAJI KALE  
AT/PO DHANODI  
TAL.WARUD  
DISTRICT AMRAOTI

He has switched over to natural farming (*nisarg kheti*) after 20 years of chemical farming. Is now a staunch supporter of natural farming.

(Source: *personal communication*, 1993)

MR. ANAND KAPOOR/ MS.KUSUM KARNIK  
BHIMASHANKAR PROJECT  
MAHARASHTRA AROGYA MANDAL  
P.O. NARODI  
TALUKA AMBEGAON  
PUNE - 410503

Ph: 02133-4263

They have worked on documentation of organic farming methods of local tribal people in their project area. Have also worked with tribal people to develop appropriate watershed development programmes for this high rainfall, steeply sloping area. Have experimented with mulching/cover crops/green manuring/indigenous trees/medicinal plants propagation etc. Have also collected information about seasons and farming systems and the practices of local people and about wild vegetables/tubers etc.

(Source: *personal communication*, 1993)

DR. TARAK KATE  
JOINT DIRECTOR  
RENEWABLE ENERGY AND ENVIRONMENT  
CENTRE OF SCIENCE FOR VILLAGES  
DATTAPUR  
WARDHA - 442001

Ph: 07152-3101 Cable: GRAMVIGYAN

## MAHARASHTRA

Res: GOPURI ROAD  
GITAINAGAR  
WARDHA - 442001

Ph(R): 07152-2956

He is experimenting with ecological farming on his own one hectare of land. Has adopted an improved method of composting. He has studied the NADEP method of composting in detail. Is also working on vermicomposting. He has visited many farms where non-chemical agriculture is practised and has attempted to document the experiences of the farmers and has studied the productivity and sustainability of their systems. He is trying to develop a network of innovative farmers who are opting for alternative agriculture in the Vidarbha region of Maharashtra.

(Source: *personal communication*, 1993)

MR. RAJIV KHEDKAR  
SECRETARY  
ACADEMY OF DEVELOPMENT SCIENCES  
P.O. KASHELY  
KARJAT - 410201  
RAIGAD DISTRICT

Ph: 4008, 4009 Fax: 022-5561846

They have developed a community gene bank of traditional rice varieties. Their collection includes over 300 varieties of the Konkan region of Maharashtra. They also have a collection of ethno-medicinal plants to be found in the Western ghats which they supply to community health organisations, institutions and individuals. They have published a booklet on a self-help method, namely, rice-cloning technology for small farmers as well as several booklets on medicinal plants and their uses in Marathi.

(Source: *personal communication*, 1993)

THE DIRECTOR  
MAHARASHTRA PRABODHAN SEVA  
79, CARTER ROAD  
BANDRA  
BOMBAY - 400050

A non-government organisation involved in research and documentation, education and networking. Is also interested in organic agriculture.

(Source: *IFOAM Newsletter*, December 1991)

MR. GAURI SHANKER MAHESHWARI  
MUKTAMANI, NEAR RAHEJA COMPLEX  
WESTERN HIGHWAY, MALAD (EAST)  
BOMBAY

Ph(R): 8402268, 8401859

He is involved in organic farming.  
(Source: referred by Yagnesh Desai)

MR. BHARAT MANSATA  
EARTHCARE BOOKS  
2, ANAND KAMAL SOCIETY  
17, CARMICHAEL ROAD  
BOMBAY - 400026

Ph: 4940920

He is involved in activities like networking, research and writing/editing/publishing. Has authored a book titled *Ecological Visions* and about six-seven articles published on ecology and agriculture. Is currently working on a book entitled *The Vision of Natural Farming*.

(Source: personal communication, 1993)

MALINI AND PRAVEEN MASHRUWALA  
TRUSTEES  
PRAJNYA PRABODHINI  
C/O HARIALI, DOLARPADA  
P.O.GIRGAON  
VIA TALASARI - 401606  
DISTRICT THANE

They are trying to live in a way which is totally free from any interference with the natural way of life and are slowly giving up all that comes in the way of this type of living. They are not very keen on communication with the outside world, though they are open to ideas and suggestions which do not interfere with their natural way of living.

(Source: personal communication, 1993)

MR. KISAN MEHTA  
PRESIDENT  
PRAKRUTI 123, MAHATMA GANDHI ROAD  
OPP. BOMBAY UNIVERSITY  
FORT  
BOMBAY - 400023

Ph: 274468, 274262 Fax: 022-2040395, 2874396

Prakruti is a voluntary association of members committed to promoting a development process for an environmentally sustainable society through natural living (that is, living without being a burden on the scarce natural resources of the earth, country or region) and sustainable agriculture covering natural farming, organic farming, do nothing farming and other forms which guarantee

the saving of natural resources for future generations. They conduct orientation and training programmes, workshops, seminars, conferences etc. They also help in setting up demonstration farms and model farms. An information network facility is also in operation.

Mehta is also President of the Save Bombay Committee. He has several published papers to his credit on varied topics like sustainable agriculture, regional planning and development, alternate lifestyles and development models, urban planning and development etc.

(Source: personal communication, 1993)

MS. KIRAN MORE  
P.O.W.U.  
91, MISTRY PARK  
BHULABHAI DESAI ROAD  
BOMBAY - 400036

She is involved in documentation and educational activities. Is also interested in organic agriculture.

(Source: IFOAM Newsletter, December 1991)

MS. KAVITA MUKHI  
PROPRIETOR  
KAVITA MUKHI'S HEALTH SHOP  
NAPEAN ROAD  
BOMBAY - 400006

Res: E-3, ALDEIA SANTA RITA  
FORT AGUADA ROAD  
CANDOLIM - 403515  
GOA

She owns a health shop where organic produce is sold. Has written several articles on children and education, natural childbirth and nutrition. Presented a paper on vaccines (why not to use them) at an alternative medicine conference in 1987. Wants to start an environment friendly shop in Goa as well as a self-sustained community where natural farming is practised and promoted.

(Source: personal communication, 1993)

MR. N.D. PANDHARIPANDE  
SEWAK  
DR.KUMARAPPA GOBARDHAN KENDRA  
BAKUKA-NADEP EXPERIMENTS  
PUSAD - 445204  
YAVATMAL DISTRICT

Ph: 072334-6184

They have developed the *NADEP Compost* process by which they can prepare 30 kg of good quality compost from 10 kg of cowdung. The *NADEP* compost is a very balanced fertiliser both in terms of macro and micro nutrients. Pandharipande has written several articles and books on the subject.

(Source: personal communication, 1993)

DR. G.G. PARIKH  
VICE CHAIRMAN  
YUSUF MEHERALLY CENTRE, TARA  
NATIONAL HOUSE  
6, TULLOCH ROAD  
APOLLO BUNDER  
BOMBAY - 400039

Ph: 2020617

The Centre is involved in various activities like relief work in times of natural disasters, workshops for training in carpentry, auto repair, bakery, soap-making and afforestation. Local farmers are provided with information on vermiculture and natural farming methods. It has also undertaken watershed development.

(Source: personal communication, 1993)

MR. WININ PEREIRA  
CENTRE FOR HOLISTIC STUDIES  
ANUSANDHAN  
79, CARTER ROAD  
BANDRA  
BOMBAY - 400054

He is involved with organic farming.  
(Source: *Ifoam Newsletter*, December 1991)

DR. W.B. RAHUDKAR  
25/356 LOKMANYANAGAR  
PUNE - 411030

He has conducted several experiments in organic farming. He also gives consultation to farmers on organic farming, particularly on natural methods of plant protection. Has several articles, papers and a book to his credit. He received the Vasanttrao Naik Krishi Pratisthan Award for published literature on agriculture.

(Source: personal communication, 1993)

MR. DEEPAKBHAI SACHDEV  
MANDARJYOT COOPERATIVE SOCIETY LTD.

'A' WING, ROOM NO.6  
NEAR JAGDAMBA HOTEL  
52 BUNGALOW COMPLEX  
PANVEL - 410206

He is involved in organic farming.  
(Source: referred by K.B.Thakkar)

MR. ASHOK V. SANGHAVI  
DIRECTOR  
SANGHAVI FARM  
STUDIO BAHAR  
23 A, CENTRAL CHOWPATTY BLDG.  
CHOWPATTY  
BOMBAY - 400007

Ph: 3613785, 3610213, 3611595

Res: 702 KISINET BUILDING, 7TH FLOOR  
12, FORJET STREET  
BOMBAY - 400036

Ph(R): 3864039

The Sanghavi brothers, taking inspiration and advice from Bhaskar Save, initiated one of the most unique natural farming experiments in our country, five years ago in Valsad, Gujarat. Normally coconut trees are planted on a 25' X 25' basis so that four trees occupy 625 sq.ft. of land i.e. there are 70 trees to an acre. They have instead planted two trees together, leaving 50 ft. on one side and 25 feet on other, so that the trees still get sunlight falling on 625 sq. feet space each, thus accomodating 84 instead of 70 trees. On the vacant space on either side, medium and short life trees and plants were sown, thereby improving both the quality and quantity of production. After the tremendous success of the above experiment, they tried the experiment called *Surya Mandal* wherein they planted 144 trees in one acre of land. With the *Surya Mandal* they wanted to prove that 12 plants in a circle can survive with the use of 15-20 litres of water/day. Over the last one and a half years, they have achieved remarkable results. The *chikoo* plants which normally give yields after seven years have given yields within one and a half years. Save's system has also been successful when applied to agricultural crops.

(Source: personal communication, 1993)

MR. ANIL D. SHAH  
CHAIRMAN  
MAHAJANAM  
510 PRASAD CHAMBERS  
OPERA HOUSE  
BOMBAY - 400004

## MAHARASHTRA

Ph: 3610218, 3619928 Tlx: 76295 VNUS IN  
Fax: 3630059, 3647520

He owns a health food place called Vardhaman Sanskriti Dham (VSD) in Bombay. *Wheat, rice, bajra, sugar, mung, chana, gur, fruits like chikoo, mango, papaya and vegetables are bought from cultivators in Dahanu and western India and are sold by VSD. The demand for such healthy, organically grown food is increasing as people become aware of the hazards of chemically grown food. With present sales at Rs.4 lakh per annum, VSD plans to expand its services in the suburbs as well. They also organise lecture programmes on organic farming.*

*(Source: personal communication, 1993)*

MR. MAHENDRA P. SHROFF  
PROPRIETOR  
SHROFF FARM  
AT AND STATION VANGAON (W.RLY)  
THANE - 401103

Ph: 7536

He has seven acres of *chikoo* orchards under earthworm farming since 1985. Has written several articles in Marathi newspapers. He is deeply involved in research, development and extension of organic farming. Is also involved in research and development of hand tools, bullock driven implements and simpler, cheaper methods of irrigation.

*(Source: personal communication, 1993)*

MR. K.B. THAKKAR  
301-305, JOLLY BHAVAN NO.1  
10, NEW MARINE LINES  
BOMBAY - 400020

Ph: 2058550, 2053828 Tlx: 011-85214  
Fax: 2088290 Cable: WORLDSTAR

Res: R-1, EDEN HALL  
DR. ANNIE BESANT ROAD  
WORLD  
BOMBAY - 400018

Ph(R): 4926000, 4920010

A philanthropist, he is also actively engaged in organic agriculture.

*(Source: personal communication, 1993)*

MS. VIJAYA VENKAT  
A-51 OCEAN GOLD APARTMENTS

## MAHARASHTRA

TWIN TOWER LANE  
PRABHADEVI  
BOMBAY - 400025

He is involved in organic farming.

*(Source: referred by K. B. Thakkar)*

## ORISSA

THE DIRECTOR  
AGRAGAMEE  
KORAPUR  
KASHIPUR - 765015

A non-governmental organisation involved in education and organic farming.

*(Source: IFOAM Newsletter, December 1991)*

MR. JAGADANANDA  
MEMBER SECRETARY  
CENTRE FOR YOUTH AND SOCIAL DEVELOPMENT  
A-70, SAHEED NAGAR  
BHUBANESHWAR - 751007

Ph: 0674-57963, 0674-55428 Tlx: 675-373 CYSD IN  
Fax: 0674-54974

A non-government organisation involved in education and documentation as well as organic agriculture.

*(Source: personal communication, 1993)*

MR. ASHOK KUMAR NANDA  
SECRETARY  
VIKASH  
298, SAHID NAGAR  
BHUBANESHWAR - 751007

Ph: 53383, 54148

Res: 298, SAHID NAGAR  
BHUBANESHWAR - 751007

Ph(R): 53383

H  
VIKAS has been working on issues related to environment since 1986 creating awareness, growing trees and promoting devices pertaining to renewable sources of energy. It has been involved in sustainable agriculture since 1989 and have a small experimental organic farm at Bhubaneshwar. It has also started work on another experimental farm near Konark on saline land.

(Source: personal communication, 1993)

MR. JOSE PUTHEN  
EXECUTIVE DIRECTOR  
VIKAS NIKETAN  
MUNIGUDA P.O.  
RAYAGADA DISTRICT - 765020

Ph: 0685685-566

Vikas Niketan has worked on vegetable gardens using ecological principles like preparation of compost, natural pesticides etc. It has also worked on the promotion of indigenous seed and traditional knowledge etc. At present, it is working in 156 tribal villages of Rayagada district on various socio-economic development programmes which include rural education, drinking water, wasteland development and afforestation, supply of water filters, village vegetable gardening and conducting of seminars and workshops.

(Source: personal communication, 1993)

PROF RADHAMOHAN  
ADVISOR  
APPLIED ECONOMICS  
SAMBHAV  
AT/P.O.ROHIBANK  
VIA KURAL  
DISTRICT NAYAGARH - 752090

SAMBHAV is engaged in practising, demonstrating and training in organic/natural farming. They are developing a farm of about 85 acres of land purely on ecological principles. A number of articles have appeared in newspapers, giving bioalternatives to chemical pesticides. Has also received the Global 500 Roll of Honour in 1989.

(Source: personal communication, 1993)

DR. SABYASACHI RATH  
ASSOCIATE PROFESSOR  
DEPARTMENT OF HORTICULTURE  
COLLEGE OF AGRICULTURE  
ORISSA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY  
BHUBANESHWAR - 751003

Ph: 402970 EXT.24

Res: 2081, CHINTAMANISWAR COLONY  
BHUBANESHWAR - 751006

Ph(R): 52655, 50111

He has worked on forest based mixed farming systems and waste recycling as also on sustainable agriculture in relation to farming systems research. He has written several papers on the subject. He is involved in organising work in the NGO sectors for the rural poor. He is mostly engaged in agroforestry and horticulture.

(Source: personal communication, 1993)

MR. ELIAZAR T. ROSE  
FOUNDER / DIRECTOR  
NEW HOPE RURAL LEPROSY TRUST  
POST BAG 1,  
MUNIGODA  
RAYAGADA DISTRICT - 765020

He has worked to establish food income gardens for tribal women to help overcome vitamin A deficiency. Received the Ligurgia International Award for work in leaf concentrate nutrition in 1991.

(Source: personal communication, 1993)

## RAJASTHAN

MR. DEVENDRA  
VILLAGE JHIRI  
P.O. BANSKHEDI  
VIA MONOHARTHANA  
JHALAWAR DISTRICT - 326037

A mechanical engineer from Jodhpur, he started natural farming on half acre of land in village Jhiri. The results were comparable with any of the normal cultivable land in his area. He has two papers and several articles to his credit. He is basically interested in and involved with organising people. Is also involved in other activities like education and group mobilisation.

(Source: personal communication, 1993)

MR. HEERA LAL PATEL  
DIRECTOR  
GRAMEEN VIKAS SANGATHAN  
VILLAGE & P.O. GHADMALA  
VIA KANBA

## RAJASTHAN

DUNGARPUR DISTRICT - 314804

Ph: 2673

He is working with 55 tribal women in organic agriculture in Bicchiwara Block and is experimenting with tribal pest-control using trees and herbs.

(Source: personal communication, 1993)

MR. DEVI LAL VYAS

DIRECTOR

PEOPLE'S EDUCATION AND DEVELOPMENT ORGANISATION

VILLAGE & P.O. MADA

DUNGARPUR DISTRICT- 314001

Ph: 02964-6128, 02964-6129 Fax: 02964-3019

He is working with 200 tribal women in organic vegetable cultivation and is experimenting with tribal, traditional pest-control through trees and herbs. He has prepared a training guide on organic vegetable cultivation.

(Source: personal communication, 1993)

## TAMIL NADU

DR. T.S.ANANTHU

NAVADARSHANAM

GUMLAPURAM

THALLY - 635118

He is engaged in activities like research and documentation. Is interested in organic agriculture. In an article, *The Promise of Natural Farming*, he presented an overview of the state of natural farming. He pointed out that encouraging results are emerging out of the various experiments being conducted in natural farming in India. He has also published a research document *Natural Farming-The Mohanpur Experiment* which has been prepared by the Gandhi Peace Foundation and the Indian Institute of Technology, Delhi, focussing on an experiment to investigate the possibility of farming in Indian conditions using the 'Eco-development' concept of Fukuoka.

(Source: IFOAM Newsletter, December 1991)

MR. L.ANTONYSAMY

CEDA TRUST

98 KOOTURU NAGAR

DINDIGUL - 624004

## TAMIL NADU

He is involved in organic farming.

(Source: referred by Dr.P.Muthu)

MR. BERNARD

AUROVILLE GREENWORK RESOURCE CENTRE

ISAI AMBALAM SCHOOL

P.O.KOTTAKARAI

IRUMBAI

AUROVILLE - 605101

A group of individuals engaged in networking and educational activities. They are also involved in regenerative agriculture, water harvesting and recycling, soil development and indigenous genetic resources.

(Source: personal communication, 1993)

MR. JOSS BROOKS

COORDINATOR

AUROVILLE GREENWORK RESOURCE CENTRE

ISAI AMBALAM SCHOOL

P.O.KOTTAKARAI

IRUMBAI

AUROVILLE - 605101

Ph: 0413-862290 Fax: 91-0413-38132

Res: PITCHANDIKULAM FOREST

AUROVILLE 605 101

The Pitchandikulam farm-forest, spread over 45 acres, comprises of 500 different tree species, sanctuary, woodlots, fodder lots, grains, pulses, oilseeds and legumes. No chemicals have been used here. Vegetable gardens are either natural farming mulch gardens or bio-intensive double dig plots. They use windmills for pumping water, solar power for lighting and biogas for cooking. The dairy has eight cows, chicken, guinea fowl, guinea pigs and peacocks. Animals are fed mainly on leaves of some eight species of trees. Green mulch system is used in the orchards which has several fruit trees. The diversity of the system does not invite major insect imbalance. There are about 125 species of birds. The system is essentially rainfed. Most years, the area is without rain for eight months and water is slowly pumped from 100 feet by windmills, keeping the nursery and vegetable gardens alive during the dry periods. They host many visiting training groups. They also have a seed museum and a store-supply point. Over the last few years, they have been helping establish organic village gardens in nine villages in Tirunelveli district. They are also in the process of making a video film on village nutrition gardens.

(Source: personal communication, 1993)

MR. UMESH CHANDRASEKHAR

PUVIDHAM

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**TAMIL NADU**

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VILLAGE AND POST NAGARKOODAL  
VIA INDUR  
DHARMAPURI - 636803

He is actively engaged in organic agriculture on his own farm. His activities include education, networking and providing technical support to small NGOs and individuals on various aspects of organic agriculture. Has finished a video film on bees and ecological agriculture for the Agriculture Man Ecology (AME) Programme, Pondicherry.

(Source: personal communication, 1993)

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MR. ARDHENDU S.CHATTERJEE  
VILLAGE ACTION GROUP  
C/O ISAI AMBALAM SCHOOL  
P.O.KOTTAKARAI  
IRUMBAI  
AUROVILLE - 605101

He is actively engaged in organic farming. Is also involved in education, documentation and networking.

(Source: IFOAM Newsletter, December 1991)

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MR. FATIMSON  
SOCIAL FORESTRY INFORMATION PROJECT  
PLOT NO.5E, VINAYAGANAGAR  
P.O.BOX 63, K.K.NAGAR  
MADURAI - 625020

He is involved in organic farming.

(Source: referred by A.C.Prabhakaran)

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MR. T.FRANCIS  
EXECUTIVE DIRECTOR  
RESOURCE CENTRE FOR ECOLOGY, AGRICULTURE AND COMMUNITY DEVELOPMENT  
CHENKUZHIKARAI  
KADAYAL-KALIYAL P.O.  
KANYAKUMARI DISTRICT - 629101

The Centre is engaged in research, training and demonstration work in organic farming and environmental matters. It is also in the process of developing a demonstration farm.

(Source: personal communication, 1993)

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MS. MEENAKSHI GHOSH  
VILPATTY  
KODAIKANAL - 624101

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**TAMIL NADU**

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She is engaged in organic farming as well as research and educational activities.

(Source: IFOAM Newsletter, December 1991)

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MR. S.K. GOPAL  
CHIEF TRAINING OFFICER  
KRISHI VIGYAN KENDRA  
GANDHIGRAM RURAL INSTITUTE  
GANDHIGRAM  
DINDIGUL - 624302  
ANNA DISTRICT

Ph: 04557-2371 Fax: 04557-2323

Res: STAFF QUARTERS  
KRISHI VIGYAN KENDRA  
GANDHIGRAM RURAL INSTITUTE  
GANDHIGRAM - 624302  
ANNA DISTRICT

They have prepared NADEP compost and applied it to fruit plants like mango, guava and for farm forestry. It has also been tried on paddy. They have been following organic farming with no difficulties.

Gopal has also been involved in the introduction of organic farming in Dindigul, Anna district, through trainings and demonstrations, lectures and meetings. He has published an article on organic farming and a folder on NADEP compost.

(Source: personal communication, 1993)

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MR. N.GOVINDAN  
DIRECTOR  
DEPARTMENT OF AGRICULTURE  
CHEPAUK  
MADRAS - 600005

Ph: 845294 Fax: 845294

The State government of Tamil Nadu is a pioneer in the production and distribution of biofertilisers in the entire country. The department has 20 state owned Blue Green Algae multiplication centres and is producing annually 260 metric tonnes of Blue Green Algae which it is distributing to selected farmers for multiplication.

Their extension agency conducts a number of training programmes, mass campaigns through farmers' training centres on the concept of balanced usage of fertilisers and organic manure for maintaining the structure of the soil. Annually 500 metric tonnes of green manure seeds are procured and distributed under the concession/raising seed farm for large scale coverage of green manure.

## TAMIL NADU

The directorate of municipal administration looks after the preparation of local manuring resources such as urban and rural compost.

Both the district agencies and the directorate of agriculture publishes a number of extension aids for propagation of green leaf manuring and organic manures for the use of farmers.

(Source: personal communication, 1993)

DR. S.JAYARAJ  
VICE-CHANCELLOR  
TAMIL NADU G.D.NAIDU AGRICULTURAL UNIVERSITY  
COIMBATORE - 641003

The university planned to set up two pilot plants for commercial production of bio-control agents to check pest attacks on major food crops, with full financial assistance from the Department of Biotechnology. The university also disseminates information on mass production of natural pest control agents by entrepreneurs.

(Source: Farmers' Journal, August 1991)

DR. A.ABDUL KAREEM  
DIRECTOR  
TAMIL NADU RICE RESEARCH INSTITUTE  
ADUTHURAI, THANJAVUR - 612101

Ph: 04376-2098, 04376-2108

He has conducted studies dealing with controlling insect pests using *neem* derivatives on rice, sorghum, vegetables, pulses etc. and brought out crop protection recommendations. He has developed *neem* treatment as a package for rice pest control by small scale farmers and has experimented with neem derivatives as a pesticide extender in combination with Carbofuran. Is conducting research on the use of botanical derivatives for the control of insect pests and diseases of rice. He has written more than 400 articles and given programmes on AIR and Doordarshan as well.

(Source: personal communication, 1993)

DR. C.N. KRISHNAN  
DIRECTOR  
PATRIOTIC AND PEOPLE-ORIENTED SCIENCE  
AND TECHNOLOGY FOUNDATION (PPST)  
29 FOURTH MAIN ROAD  
GANDHINAGAR  
ADYAR  
MADRAS - 600020

Ph: 404426

## TAMIL NADU

PPST Foundation is a charitable trust involved in research, documentation and publication of various aspects of indigenous traditions of sciences and technologies. Areas of interest include traditional agriculture, metallurgy, irrigation and foundation of Indian Theoretical Science. They publish a quarterly journal 'PPST Bulletin'. They also held a seminar in November 1988, on biological methods of pest control.

(Source: personal communication, 1993)

MR. D.SURESH KUMAR  
22 PARVATHY COMPLEX  
LAWLEY ROAD  
COIMBATORE - 641003

He is involved in organic farming.

(Source: referred by Dr.R.Vijayaghavan)

DR. K.KUMARASWAMY  
PROFESSOR  
SOIL SCIENCE AND AGRICULTURAL CHEMISTRY  
SUGARCANE RESEARCH STATION  
CUDDALORE - 607001

Ph: 04142-20630

Res: NO.2, STAFF QUARTERS  
SUGARCANE RESEARCH STATION  
CUDDALORE - 607001

Ph(R): 04142-20780 (PP)

He is of the opinion that total organic farming is possible only for subsistence agriculture. However, he also maintains that total chemical farming is hazardous and harms the soil in the course of time. This is so because organic manure provides all the nutrients needed for the soil though in small amounts. He, therefore, recommends an integrated approach in soil fertility using organic manures, fertilisers and biofertilisers in judicious combinations. They have developed a technology for preparation of enriched compost manure from sugarcane trash and other plant based organic wastes. They have also been evaluating the relative efficacy of different organic manures to increase the yield and improve the quality of sugarcane crop to enhance the soil fertility and to save on fertiliser inputs. Has written several papers and popular articles on the subject. Is writing a book on the relevance of organic manures in modern agriculture. Is presently working on integrated nutrient management for sugarcane, recycling organic wastes as enriched manures, crop residue management, reclamation and development of problem soils.

(Source: personal communication, 1993)

THE DIRECTOR  
LEISA NETWORK

TAMIL NADU

THANGAMEENA HOUSE  
EZHIL NAGAR  
KEERANUR - 622502  
PUDUKOTTAI DISTRICT

They are involved in networking for the promotion of Low External Input and Sustainable Agriculture (LEISA) in a dryland tract of Tamil Nadu and Pondicherry. They have periodical workshops, meetings, exposure tours etc. They also publish a bimonthly newsletter in Tamil called *Pasunthalir* which emphasises sustainable farming practices.

(Source: brochure, 1993)

DR. P. MUTHU  
DIRECTOR  
TRUST-HELP  
M-1956, 38TH CROSS STREET  
THIRUVALLUNAR NAGAR  
THIRUVANMIYUR  
MADRAS - 600041

Ph: 044-419053 Fax: 44-944444, 954321

Res: 1176, 6TH MAIN ROAD  
THIRUVALLUVAR NAGAR  
THIRUVANIYUR  
MADRAS - 600041

He gives training to farmers on organic farming, compost making, safe and scrupulous use of pesticides and alternatives to pesticides. He writes for an organic farming newsletter in Tamil. He is a recipient of Ashoka Fellow, USA.

(Source: personal communication, 1993)

MR. A.C.PRABAKARAN  
EXECUTIVE DIRECTOR  
DEVELOPMENT ACTIVITIES FOR RURAL PEOPLE  
PLOT NO. 23, EB COLONY  
K.PUDUR  
MADURAI - 625007

Ph: 44130

He is involved in networking activities. He is also an ILEIA contact in India. He is also involved in promoting a model farm in the project area which uses organic farming methodology. Conducts training workshops at various levels to promote the same. Also advocates use of herbs as pest control methods. Has presented a paper on 'Defining and Redefining Development Power in India'.

(Source: personal communication, 1993)

TAMIL NADU

MR. P.R.Y.PRITHIVIRAJAN  
TEAM FACILITATOR  
BHARATHA SEVA TRUST  
AVVAIYAR ECO FARM & TRAINING CENTRE  
P.O. BOX 72  
PAULO FRIERE VILLAGE  
PUDUKKOTTAI - 622001

Fax: 91-4322-3034

Res: AVVAI FARM  
VADAVARAM POST  
PUDUKKOTTAI - 622004

He has worked on extension activities for farmers. Also gives training to NGOs as well as managing a model farm. Has translated Erik van der werf's book 'Ecological Farming Principles' in Tamil.

(Source: personal communication, 1993)

MRS. B.K. PUSHPAVALLY  
DIRECTOR  
INTEGRATED EDUCATION AND RURAL-URBAN DEVELOPMENT TRUST  
FLOWER COTTAGE  
KOTTAMAVILAI  
VANNIYUR P.O.  
KUZHITHURAI - 629163  
KANYAKUMARI DISTRICT

The Trust is raising crops such as paddy, coconut, rubber and vegetables using organic manures. They do not use any chemical pesticides. They are also engaged in education, documentation and networking.

(Source: personal communication, 1993)

MS. C.RAJESHWARI  
AGRICULTURAL OFFICER  
SOIL TESTING LABORATORY  
OOTACAMUND - 643001

He is involved in organic farming.

(Source: referred by Dr.R.Vijayraghavan)

MR. C.R.RAMANATHAN  
MANAGING TRUSTEE  
BIORAMA TRUST  
GANAPATHIPALAYAM POST

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**TAMIL NADU**

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UDAMALPET TALUK - 642122

Ph: 04252-23136

Ramanathan practises forest farming on ten acres of land and has a coconut orchard on seven acres. He offers consultancy to anyone desiring to start a forest farm. He also organises occasional natural living treks and training camps. He also maintains a nursery. He is interested in organising non-formal educational courses on health and ecological farming as well as alternatives in education. Is also involved in documentation work and publishes a bimonthly titled *Good Life*.

(Source: personal communication, 1993)

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MR. A.SANKARAM  
SECRETARY  
M.S.SWAMINATHAN RESEARCH FOUNDATION  
3RD CROSS STREET  
TARAMANI INSTITUTIONAL AREA  
MADRAS - 600013

Ph: 235-1229

Res: 10, V.K.AIYAR AVENUE  
LUZ CHURCH ROAD  
MYLAPORE  
MADRAS - 600004

Ph(R): 4992600

Having studied patterns of the rice yields in South India, Sankaram found that rice cultivation has increasingly used chemical fertilisers and pesticides over the last 20 years. While this has resulted in increased yields, cultivation has become highly cost inefficient due to high inputs. There has also been a fall in soil fertility over the years. He, therefore, concluded that rice production can be made cost effective and higher yields got at lower costs by a realignment of crop production systems with an appropriate blend between the traditional organic approaches with modern technology at a level consistent with basic soil fertility, the tropical environment, agro-climatic conditions and socio-economic factors.

He has also conducted studies on the economic feasibility of making compost with urban waste. Has several published papers and project reports to his credit. Is presently working as an agricultural consultant.

(Source: personal communication, 1993)

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DR. C.V. SESHADRI  
DIRECTOR  
SHRI A.M.M.MURUGAPPA CHETTIAR RESEARCH CENTRE  
THARAMANI

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**TAMIL NADU**

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MADRAS - 600113

Ph: 2350937, 2350369 Tlx: MCRC CARE 041-7132

Fax: 91-44-510378, 415856

Res: 21, KUMARAN APARTMENTS  
43 IIIrd CROSS ROAD  
GANDHINAGAR, — X  
ADYAR  
MADRAS - 600020

Ph(R): 418284

He has published three monographs on biodynamic gardening wherein the methods are adapted to the different types of soils. On the basis of his own experiences of 14 and a half years and on John Jeavon's experiences as given in his book *How to grow more vegetables*, Seshadri concludes that biodynamic agriculture can be practised by even the very disadvantaged families owning small poor strips of land. The yields were very promising and could serve as a valuable source of nutritional and economic augmentation. The Centre has also done work on *neem* extraction as an insect repellent. Apart from growing vegetables by the biodynamic method, the Centre is also growing cereals, pulses etc. organically. Here again, only *neem* based products are used in case of pest attack.

(Source: personal communication, 1993)

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MR.R.VENUGOPAL  
FARM PROJECT MANAGER  
BODI BIO FARMS  
POST BOX NO.62  
BODINAYAKANUR - 626513

He has recently acquired, with a group of friends, about 200 acres of wasteland at the foothills of western ghats in Madurai district, where they have started biofarming. They are developing this into a bio-model for the other farmers of the area. They aim to promote agroforestry, social forestry, dryland horticulture, animal husbandry programme like calf rearing and goat rearing in the order of an integrated polyculture farming like LEISA techniques.

(Source: personal communication, 1993)

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DR. R.VIJAYARAGHAVAN  
DEPUTY DIRECTOR  
(PLANNING AND MONITORING)  
DEPARTMENT OF AGRICULTURAL EXTENSION  
TAMIL NADU AGRICULTURAL UNIVERSITY  
COIMBATORE - 641003

Ph: 41222 Tlx: 855-360-TNAU-IN

Fax: 0091-0422-41672

## TAMIL NADU

Res: 5-C, SARDAR STREET  
UDAMALPET - 642126

Ph(R): 23864

The Tamil Nadu Agricultural University has undertaken some research on green manure. Different green manure and grain legumes were evaluated for their green manuring potential during pre-rice season with limited irrigation. Green manure crops were harvested 45 days after sowing, biomass and nitrogen content of plant tissue estimated and nitrogen accumulation worked out. Green manures were grown to maturity, grain yield assessed and the biomass contributed by stalks was estimated. Among the green manures, *S. Aculeate* accumulated the largest amount of biomass followed by *S. Rostiata*. But in terms of the nitrogen contribution, both were similar. Among the grain legumes, cowpea was the best, both in terms of grain yield and biomass addition. Nitrogen accumulated was also the highest for cowpea. Vijayraghavan has about ten published articles to his credit. He was awarded the best PhD thesis award from IARI.

(Source: personal communication, 1993)

## UTTAR PRADESH

MR. SUNDERLAL BAHUGUNA  
PARVATIYA NAVJEEVAN MANDAL  
P.O.SILYARA  
VIA GHANSALI  
TEHRI GARHWAL - 249155

A leading name in the propagation of tree farming, Bahuguna believes very strongly that trees can fulfill man's basic necessities straight from the soil. We should see to it that in any given area we have trees that provide us with food, fodder, fuel, fertiliser and fiber.

(Source: *Science for Villages*, 1989)

MR. YOGESH CHANDRA BAHUGUNA  
PARVATEEYA JAN KALYAN SANGH  
AT & POST RANICHAURI  
TEHRI GARHWAL - 249119

A non-governmental organisation involved in educational activities. Is also interested in organic agriculture.

(Source: *IFOAM Newsletter*, December 1991)

DR. D.M. HEGDE  
PROJECT COORDINATOR  
DEPARTMENT OF AGRONOMY

## UTTAR PRADESH

PROJECT DIRECTORATE FOR CROPPING SYSTEMS RESEARCH  
MODIPURAM  
MEERUT - 250110

Ph: 74905, 75718 Tlx: 0594-258 DCSR IN  
Cable: AGRISYSTEM, MEERUT

Res: DII-84, PALLAVPURAM  
MODIPURAM  
MEERUT - 250110

Ph(R): 72234

He is involved in promoting the use of organic sources of nutrients in different cropping systems for achieving sustainability of production without any environmental pollution. He has three papers to his credit.

(Source: personal communication, 1993)

DR. D.K. MULDOON  
AGRONOMIST  
ALLAHABAD AGRICULTURE INSTITUTE  
ALLAHABAD - 211007

A non-governmental organisation involved in activities like education, research and information exchange. They have held demonstrations of compost making and green manuring. They are also involved in the production of vegetables by the organic system. They have also collected some data on tomatoes and cabbage.

(Source: personal communication, 1993)

DR. BHARTENDU PRAKASH  
CONVENOR  
VIGYAN SIKSHA KENDRA  
CIVIL LINES  
BANDA - 210001

Ph: 0519-22587 Cable: VIGYAN BANDA

The Kendra has worked on all aspects of organic farming both at the level of experimentation as well as practice. Their work includes identification and collection of seeds, improvement of seeds, preparation of various composts, wormi-composting and organic storage of grains.

(Source: personal communication, 1993)

MR. V.K. RAI  
DIRECTOR  
CENTRE FOR ENVIRONMENT AND RURAL TECHNOLOGY

## NEW DELHI

MR. PRATAP AGGARWAL  
C-2/134, JANAKPURI  
NEW DELHI - 110058

He initiated organic farming at the Friends Rural Centre in Rasulia, Hoshangabad which, in a span of five years, became a no-till agricultural farm using organic manures and natural pest control techniques. The soil fertility and water retention abilities were enhanced over the years as also the yield of crops, especially rice. The soil structure is now being maintained by earthworms which reappeared once the chemical fertilisers were stopped. He has also studied various farms in Madhya Pradesh which are using organic farming techniques.

(Source: *Moving Technology, February 1991 and FRC Report 1987*)

FR. K.T. CHANDY  
PROGRAMME DIRECTOR  
PROGRAMME FOR AGRICULTURAL EDUCATION  
INDIAN SOCIAL INSTITUTE (ISI)  
10 INSTITUTIONAL AREA, LODI ROAD  
NEW DELHI - 110003

Ph: 4625015, 4622379, 694602, 611745, 4635096  
Fax: 4690660

Res: D 25D, SOUTH EXTENSION II  
NEW DELHI - 110049

Ph(R): 6449496

ISI is a non-governmental institute engaged in research, training and action, which are then translated into activities such as publications, agricultural education and training, legal and women's development, documentation and information exchange, programmes for scheduled castes and tribal studies. Fr. Chandy has evolved a new method of composting for organic manure and village sanitation. He has also elaborated the concept of organic matter cycle and its practice for small and marginal farmers. He planned the syllabus and wrote the text-books for the Shillong University on piggyery and horticulture. Has prepared papers on agricultural technology for small and marginal farmers, sustainable farming and farmers, development with justice to Man and Nature.

At present, he is engaged in preparing 800 booklets on various topics like agriculture, animal husbandry and ecology. Of these 320 have been written and 210 have been printed.

(Source: *personal communication, 1993*)

MR. A.T. DUDANI  
PRESIDENT

## NEW DELHI

SOCIETY FOR CITIZEN CONCERNS  
C-35, PANCHSHEEL ENCLAVE  
NEW DELHI - 110017

Ph: 6434075, 6467724 Fax: 11-6435807

He has been associated with a number of publications on the subject. He was also responsible for a video entitled *killing fields* and a report titled *Agriculture and People*.

(Source: *personal communication, 1993*)

MR. ABEY GEORGE  
SENIOR RESEARCH FELLOW  
CENTRE FOR RURAL DEVELOPMENT AND APPROPRIATE TECHNOLOGY  
INDIAN INSTITUTE OF TECHNOLOGY  
HAUZ KHAS  
NEW DELHI - 110016

Ph: 652902 Tlx: 31-73087 IITD IN  
Fax: 6862037 ATTN ABEY G.

Res: AYAMKUDY P.O.  
MUTTUCHIRA  
DISTRICT KOTTAYAM  
KERALA

Ph(R): 048294-423

He has looked at tribal and traditional agriculture in Kerala, with special reference to the tribal regions. He has also looked in detail at the experimental organic agriculture plots with special reference to the Mohanpur experiment in Bijnor, Uttar Pradesh. Has also studied composting method especially the NADEP method. He authored a paper on biological methods of pest control in 1988 and co-authored a report on the Mohanpur experiment on Natural Farming.

(Source: *personal communication, 1993*)

MR. P.P.S. GOSAIN  
SECRETARY  
CONSORTIUM ON RURAL TECHNOLOGY (CORT)  
D-320, LAXMI NAGAR  
NEW DELHI - 110092

Ph: 2244545 Tlx: 3161167 FAIR IN CORT  
Fax: 91-11-3322810

CORT is a non-governmental non-profit organisation working in the field of rural appropriate technologies. It is a networking organisation providing information exchange, technical guidance/expertise and other services. It is involved in a number of activities including organic

farming and alternative agricultural practices.  
(Source: personal communication, 1993)

MS. NARGIS SHIAVAX NARGOLWALA  
NARGOLWALA FARM  
RAJOKRI ROAD  
NEW DELHI - 110038

Ph(R): 5563929, 5563852

She has been experimenting with natural farming for the last six years on a six acre farm. She uses no chemicals on her farm now. For manure, she uses only cowdung. Her earlier experience with horsedung led to the germination of oats coming from the horsedung into the soil, which required weeding out. She, therefore, discontinued the usage of horsedung. Instead, she adds neemkhali and at times powdered charcoal to the soil. She has also started making humus by using earthworms.

(Source: personal communication, 1993)

PROF. P. S. RAMAKRISHNAN  
PROFESSOR OF ECOLOGY  
SCHOOL OF ENVIRONMENTAL SCIENCES  
JAWAHARLAL NEHRU UNIVERSITY  
NEW MEHRAULI ROAD  
NEW DELHI - 110067

Ph: 652438 Cable: JAYENU

Res: 1020 JAWAHARLAL NEHRU UNIVERSITY  
NEW DELHI - 110067

Ph(R): 663571

He has looked at the agroecosystem organisation and function of traditional societies. Has written on shifting agriculture and sustainable development in the UNESCO MAB Book Series. Involved with audio-visual education activities. Recipient of several awards like Pithambra Pant Award, University Grants Commission (UGC) Award, National Academic Science Award and UGC National Lecturer Award in Ecology and Environmental Science.

(Source: personal communication, 1993)

MR. YADAV RAMKESH  
ACTION FOR FOOD PRODUCTION  
25-1A, INSTITUTIONAL AREA  
D BLOCK, PANKHA ROAD  
JANAKPURI  
NEW DELHI - 110058

He studied the low lying Khadarland which floods three to four times every year as this area has no existing drainage system. The drains which do exist get blocked due to siltation. Although the soil in this area is fertile loam soil, cultivation is a problem due to heavy waterlogging and poor drainage. His suggestions for ecologically sustainable development in this area are: development of drains to connect them to the main river; using farm roads to act as intermediate drainage channels by making them deep; deepening of existing tanks; introduction of fish farming; introduction of plantations on banks of main drains; introduction of intercropping; use of short duration crops like mung, maize etc. during summer; introduction and use of Azolla for lowland rice cultivation and improvements in subsidiary occupations.

(Source: AME Report)

DR. SANTOSH  
CENTRE FOR RURAL DEVELOPMENT AND APPROPRIATE TECHNOLOGY  
INDIAN INSTITUTE OF TECHNOLOGY  
HAUZ KHAS  
NEW DELHI - 110016

Ph: 666979 Extn. 3120 Tlx: 31-73087 IITD IN  
Fax: 91-11-6862037

The CRDAT centre has over the past six-seven years worked in the area of organic farming. Their work ranges from scientific studies, research and development, field testing to interaction with the farmers. Information dissemination and awareness generation has also been done to a limited extent. They started with an experimental model in Palri village in Uttar Pradesh with organic manure production using biogas and composting technology. They have also been involved in R&D work on other aspects of organic farming like biocontrol agents for pest control, exotic species of earthworms for vermicomposting etc. They also did extensive field testing work on NADEP composting and have been instrumental in getting NABARD to refinance the projects on NADEP composting at the national level. Several publications have come out highlighting the various aspects of their work.

(Source: personal communication, 1993)

MR. D. P. SINGH  
ACTION FOR FOOD PRODUCTION  
25/1 A, INSTITUTIONAL AREA  
PANKHA ROAD, D-BLOCK  
JANAKPURI  
NEW DELHI - 110058

Member of the coordination committee for the seminar and exposure programme on *Sustainable Agriculture and Sustainable Development* in Germany, 1991. The seminar was organised by the Bread for the World.

(Source: IFOAM Newsletter, December 1991)

## NEW DELHI

D.R. RAMENDRA SINGH  
ENERGY AND ENVIRONMENT GROUP (EEG)  
P.O. BAG 4  
NEW DELHI - 110066

EEG is an NGO engaged in activities like education, research, documentation and information exchange. Is also involved with organic agriculture.

(Source: IFOAM Newsletter, December 1991)

MR. K.SIVAPRASAD  
ACTION FOR FOOD PRODUCTION  
25/1 A, INSTITUTIONAL AREA  
PANKHA ROAD, D-BLOCK  
JANAKPURI  
NEW DELHI - 110058

A specialist in social forestry, he has promoted the concept of wasteland development by advocating an ecological approach to agroforestry and organic farming. He believes that agroforestry and organic farming have certain advantages over other systems of wasteland development; for instance, it creates more self-reliance in the rural sector, increases biological activity in the soil, increases recharge of underground water; there is increased diversity of plant species, which are also more disease-resistant.

(Source: Prakriti, 1987)

## PONDICHERRY

MR. MANINDRA PAL  
MANAGER  
AGRICULTURIST (ORGANIC)  
SRI AUROBINDO ASHRAM  
GLORIA LAND  
PONDICHERRY - 605002

Ph: 82-2137, 39017

Spread over 100 acres, Gloria farm uses organic agricultural techniques, using no pesticides. Slurry from biogas plants is used as fertiliser. The dairy is an integral part of the farm, with nearly 250 cattle mainly of Indian pedigree. No vaccination is needed for them. The total milk production is 650 litres per day. About 500 kg of cowdung is used in three biogas plants. Approximately 30 acres of land is used for rice production with a yield of 150 tons/year. The banana production is 5000 bananas/day. Coconut trees together with some mango and papaya trees are also grown. A number of vegetables are cultivated. Honey is provided by beehives. They also make special efforts to promote research on the native varieties with the use of biological, low-tillage or no-tillage mulching methods. The results have been very encouraging. The work done at Gloria

## PONDICHERRY

Land has been acknowledged internationally and articles on the farm have appeared in newspapers and magazines in India and abroad.

(Source: personal communication, 1993)

MR. RICHARD PEARSON  
TEACHER  
BIOLOGY SECTION  
SRI AUROBINDO ASHRAM  
PONDICHERRY - 605002

Ph: 0413-34836 Fax: 0413-28132 AUROSHIKS

The Ashram is an international organisation for research in Yoga and is also involved in activities like research and documentation and integral education. They are also engaged in horticulture, wasteland development and organic agriculture. Pearson is a teacher of natural sciences and a writer of articles on Nature. He has also compiled and edited a book on *Flowers and their Message*. He delivers lectures on horticulture, bee-keeping, environment and psychic presence in the vegetal kingdom. He also coordinates information on compost-making and the bio-gas plant at the Gloria Farm.

(Source: personal communication, 1993)

MR. ERIK VAN DER WERF  
AGRICULTURE MAN ECOLOGY  
POST BOX NO.11  
PONDICHERRY - 605001

The AME programme seeks to contribute to a structural improvement of the food situation in developing countries, by stimulating the self-reliance of marginal farmers through ecological agriculture. In India, the AME Program is implemented by ETC, Netherlands with the Ecological Development Society, Pondicherry. The training courses are conducted in Auroville. In 1989-90, the AME Programme studied the transition experiences of 12 organic farmers in Tamil Nadu, Kerala and Karnataka. It was found that, on an average, the farmers had 7-10 years of experience with organic farming. As soil fertility improved, the yields increased during transition and even surpassed conventional levels; farmers were able to reach self-sufficiency in foods which earlier had to be partly purchased. There were decreases in expenditure for inputs like pesticides, fertilisers, tillage etc. Soil fertility was improved by the use of organic manure and a discontinuance of chemicals. The farmers had less pest and disease management problems, which they attributed to use of organic manure and increased presence of natural predators; the pest control techniques were adapted from traditional farming practices.

(Source: IFOAM Newsletter, December 1991)

## WEST BENGAL

MR. PANNALAL DASGUPTA  
TAGORE SOCIETY FOR RURAL DEVELOPMENT  
14, KHUDIRAM BOSE ROAD  
CALCUTTA - 700006

The Tagore Society has been conducting experiments in no-tillage farming under the guidance of Dr. Mitra since 1986. The experiments confirm that natural farming can yield average or above average yield of better quality crops without any tillage, fertilizers or pesticides. As a result the cost-benefit ratio goes up because of low inputs. The water requirement also goes down by half or one-fourth.

(Source: IFOAM Newsletter, December 1991)

MR. ASHOK GHOSH  
GENERAL SECRETARY  
SOCIETY FOR EQUITABLE VOLUNTARY ACTIONS  
3C MILAN APARTMENTS  
52/3 VIDYAYATAN SARANI  
CALCUTTA - 700035

Ph; 526365

Project Office: VIKAS KENDRA  
VILLAGE AND POST ATGHARA  
VIA KOLSUR  
NORTH 24 PARGANAS - 743438

A non-governmental organisation which believes in a holistic approach to rural development. They lay emphasis on sustainable agriculture. In their own agriculture extension centre (Krishi Vikas Kendra) they make various comparative experiments. The land area is around three acres. They also motivate people to produce organic manure. As a result of our training more than 500 compost pits have come into existence. Presently they are covering about 35 villages and in all the villages they have youth groups consisting of farmers.

(Source: personal communication, 1993)

PROF. SAIJI MAKINO  
ADVISOR OF NATURAL FARMING  
TAGORE SOCIETY FOR RURAL DEVELOPMENT  
'PRASH'  
PURRAPALLI  
P.O.SANTINIKETAN - 731235

He has a one acre orchard in the university campus where he has grown various fruit trees in the natural way. He was also the translator for Dr. Fukuoka and has translated his method and philosophy into Hindi.

(Source: personal communication, 1993)

## WEST BENGAL

MR. PRABHAT MENON  
C/O CLASSIC BOOKS  
10, MIDDLETON STREET  
CALCUTTA - 700071

He is involved in networking, education and documentation. Is also interested in organic agriculture.

(Source: IFOAM Newsletter, December 1991)

DR. MRINAL MITTRA  
AA/18, BAGIATI DESIIBANDHU NAGAR  
CALCUTTA - 700059

He has conducted research on different types of soil using natural farming techniques and organic farming and their combination. His results indicate that a combination of the two can be very beneficial from the first season itself. The soil improves rapidly if organic inputs are used and the yield starts improving sooner than if only natural farming techniques are used. Also, he emphasises the use of live mulch over straw mulch as in Fukuoka's method because straw has other uses in India. Thus, natural agriculture with methods adopted from natural farming of Fukuoka, organic inputs which are readily available and other suitable modifications to suit local conditions is a much safer and more sustainable method of agriculture in his opinion. The results of his work were published in two volumes of *Natural Agriculture in the Tropics and Debaclé*. He was also the scientist-in-charge of the field station of Bose Institute in Calcutta. At present, he is working as an agricultural advisor for the Society for Equitable Voluntary Action, Calcutta.

(Source: personal communication, 1993)

MR. SRIKANTA MONDAL  
S.E.V.A.  
3C MILAN APARTMENTS  
52/3, VIDYAYATAN SARANI  
CALCUTTA - 700035

A non-governmental organisation involved in education, documentation and networking. Is also interested in organic agriculture.

(Source: IFOAM Newsletter, December 1991)

## UTTAR PRADESH

BADLAPUR (PURA MUKUND)  
JAUNPUR - 222125

He is involved with the training of farmers in improved composting methods; holds demonstrations on the use of biogas slurry in vegetable cultivation and natural farming practices with mixed cropping. He has written two reports on traditional technology. He is also involved in research and development on alternative pesticides by using *Neem*, *Garlic*, *Tulsi*, *Mehandi* and *Genda flower*.

(Source: personal communication, 1993)

DR. K.S. RAO  
SCIENTIST

SUSTAINABLE DEV. OF RURAL ECOSYSTEMS  
GB PANT INSTITUTE OF HIMALYAN ENVIRONMENT AND DEVELOPMENT  
PARYAVARAN BHAVAN  
KOSI-ALMORA - 263643

Ph: 05962-81144 Fax: 05962-22100 GBPIHED

Res: QUARTER NO.25  
SUNRISE COLONY  
CHENAKHAN, DHARANAULA  
ALMORA - 263601

Ph(R): 05962-22556

He has worked on the role of bamboos in the maintenance of soil fertility in shifting agriculture, during his doctoral studies. Currently, he is working on the traditional organic farming systems of the western Himalyas, especially the high elevation zones.

(Source: personal communication, 1993)

MR. SHOOR VIR SINGH  
CHANDA NANGLI  
HALDAUR  
BIJNOR DISTRICT - 246726

He has allocated 11 acres of his farm in Bijnor district, to experiments in natural farming. He has involved in his experiments, some local farmers as well as some staff members of the Centre for Energy Studies, the Centre for Rural Development with Appropriate Technology at the Indian Institute of Technology, Delhi and the research wing of the Gandhi Peace Foundation. Their aim is to investigate the possibility of farming using concepts popularised by the Japanese farmer-researcher, Masanobu Fukuoka, but adapted to Indian conditions. The results seem to be encouraging, in the sense that, with a carefully selected combination of crops, you could get excellent quality yields without any tilling or use of fertilizers.

(Source: personal communication, 1993)

## UTTAR PRADESH

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The Gorakhpur Environmental Action Group (GEAG) is involved in various activities including environmental orientation in schools, rural development and ecological agriculture to popularize sustainable agriculture and orient farmers to adopt it and make it cost effective. They publish a quarterly newsletter *Vasundhara* in collaboration with ILEIA as also an annual magazine *Prakriti*. It also has a working network of NGOs interested in the issue. They are also planning to start a resource centre with demonstration-cum-research facilities alongwith practical implementation.

Wajih is currently directing a field project on ecological agriculture in a few villages of Gorakhpur district, with the involvement of the farmers. He is also the editor of *Vasundhara*.

(Source: personal communication, 1993)

## WEST BENGAL

MR. BIDHAN CHANDRA  
KRISHI VISWAVIDYALAYA  
B-10/253, P.O.KALYANI  
NADIA - 741235

A non-governmental organisation engaged in education and research. Is also interested in organic agriculture.

(Source: IFOAM Newsletter, December 1991)

DR. B.N. CHATTERJEE  
DEPARTMENT OF AGRONOMY  
KRISHI VISWAVIDYALAYA  
B-10/253, P.O.KALYANI  
NADIA - 741235

He is engaged in research and educational activities. Is also interested in organic agriculture.

(Source: IFOAM Newsletter, December 1991)

ANNEXURE:

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Summary Report: Workshop on Eco Friendly New Alternatives for  
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Rural Shelters (Bangalore, 19 - 21 August, 1993).  
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Considering the grave energy crisis confronting the Indian economy and consumption of a large quantity of wood to cater the need of fuel, efforts have been stressed to develop eco friendly rural shelter alternatives. Appreciating the role and opportunities of NGOs in reaching out to low cost technologies for the needs of the poor, the workshop on eco friendly alternatives for rural shelters was organised by BCO in collaboration with ASTRA in Bangalore, attended by 25 participants from Orissa, AP, TN and Karnataka.

The objectives of alternative low cost building techniques were recognised to be based on:

- Maximum utilisation of local resources and reduction in dependence of fossil fuel.
- The need to generate employment through local participation with less energy consumption.
- The need to promote environmental harmony/user friendly technologies.

Such alternatives are mostly locally relevant and bear possibilities of people's involvement/participation at every stage of implementation.

The use of basic materials, essential ingredients, involved techniques of quality assessment and technical guidelines were introduced to the participants through lectures and audio visuals followed by field demonstrations.

It was observed that acceptance and adoption of such alternatives will automatically lead to eco-regeneration and conservation and reduce the dependency on money-lenders.

A plan for the follow-up of the workshop was drawn, as follows:

- Training of Staff/relevant people of Partner NGOs on the subject and the technical link-up with ASTRA for follow-up implementation.
- NGOs to play the role of centres for technological dissemination (low cost, locally relevant, eco friendly) in a wider and long term perspective.
- Possible solutions to be searched for problems coming up in implementation of the techniques.

PROPOSED MECHANISM FOR TAKING-UP FOLLOW-UP  
ACTION PLAN ON ENVIRONMENT

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A Resource group, with 4 - 5 partner organisations and 2-3 subject experts, to be established during platform meeting, for taking-up the follow-up activities on issues of environment (refer point 6 of the report). One organisation be entrusted for the co-ordination of proposed activities.

- An inventory of Partner NGOs to be prepared individually, comprising their activities on environmental issues, linkages of such activities their overall programme, the felt needs (training, information etc), faced problems in effective implementation of environmental activities, available and required expertise for the same and other specific informations.

Based on the review of such an inventory:

\* Experts/ Resource Institutions (like AME) to be identified so as to be able to help the partners at required levels and link-up be ensured.

\* Information, literature, materials (particularly relevant to the areas of interest of partners to be compiled and registered. A regular (periodical) system of sending such information to be worked out ( 'Dialogue' - 2 pages?).

\* Organise Workshops, Seminars and Training on important and urgent issues (eg. environmental pollution, energy and environment, urban environment).

- Efforts to be made for orientation of staff of NGDOs on the holistic concept of environment.

- Case studies to be undertaken for understanding the success/failures and opportunities on environmental issues (eg. sustainable agriculture in North India).

- Efforts to be made towards overcoming the constraints and catering to the expressed needs of NGDOs (refer point 5 of report).

- Dialogue to be established between the different NGDOs working on common/identical issues.

The Resource group to meet periodically to review the progress, and make necessary recommendations for achieving the objectives of the activities.