FOREST RESEARCH AND POVERTY: EMERGING ISSUES FOR THE CGIAR

Jeffrey Sayer - WWF-Int

Preamble

ICRAF, CIFOR and to a lesser extent the other natural resources centres have invested heavily in developing strategies to orient their work. The logic behind these strategies is in my opinion still valid. The general orientation of the types of research that the CGIAR does on forests is at present appropriate. The Science Council should not invest in trying to achieve improvements to the research agendas of the centres "at the margins". There are more important questions about ***how the research is carried out and particularly the nature of the partnership arrangements with NARs and the nature of the relationship with research users.***

A number of things are changing in the way in which research is organised:

- Teams that include scientists from ARIs now conduct much of the best research in forest systems in developing countries. Improved electronic communications and air travel make it much easier for a scientist to be based in an institute in an industrialised country and to conduct research or mentor teams of researchers in developing countries. The CGIAR needs to redefine its relations with ARIs - it needs to provide a convening function and to build the bridges with research users.

- Some developing country research institutes are now operating at a high level of sophistication - in other parts of the world the research capacity has atrophied in recent years. The challenge for the CGIAR is to develop effective and efficient relationships with diverse sets of NARs partners. Its key role is to improve linkages, promote synergies and accelerate the spread of innovations (in science methods).

Context

The overall volume of investment in research on forests and forestry is very large. The International Union of Forestry Research Organisations has several thousand institutional members working on mainstream "forestry" issues. A great deal of research on forest biodiversity and on the global environmental values of forests - biological diversity, climate change mitigation and adaptation etc - is conducted by ARIs and universities. There is a large body of research on traditional uses of forests and local management systems that is being conducted by northern development and humanitarian NGOs. In spite of this the capacity of public sector forestry research institutes in developing countries is weak:

- Forestry research NARS in poorer countries have rarely benefited from international development assistance.
- Many NARS have not responded to the changes in needs and responsibilities for forests (although some have). Their focus often continues to be on the silvicultural needs of managing "state forests". They

have, in general, invested little in the forest management needs of communities and of local forest dependent people.

- The situations in the three principle tropical regions are quite different. In Africa the forestry NARS are particularly weak. In Latin America the situation is patchy with good quality and highly relevant research in some countries (Central America - CATIE, Amazonia - EMBRAPA and some universities, but weak elsewhere). In Asia India and Malaysia have strong but rather traditional forest research capacity whereas Indochina and insular SE Asia are weaker. In LAC forestry research is usually conducted in natural resource management institutes and therefore livelihood needs are integrated, in Asia the NARS tend to have more traditional forestry agendas.
- Researchers from NGOs and universities have filled the vacuum left by traditional forestry research in all three regions and have done interesting work on local management systems, non-timber forest products, biodiversity and traditional uses/knowledge.
- Research on the global values of forests and of the need for forest management to address the mitigation and adaptation needs of delivering on the targets of the multilateral environmental agreements -MEAs - has been neglected by NARs and most of the recent work has come from universities in industrialised countries. This work has tended to neglect the poverty aspects of the MEAs.
- A very small number of "northern" ARIs and universities are providing "cutting edge" research to address emerging strategic research needs in support of conservation and sustainable management of forests.

EMERGING RESEARCH NEEDS

There are two divergent tendencies.

- **First,** a need to respond to the research needs generated by the increasing concern at the erosion of the global environmental benefits provided by forests. There are four principle intergovernmental processes generating these needs:
  - The Convention on the Conservation of Biological Diversity: concerned with the conservation of species and ecosystems and concentrating on tropical moist forests. The CBD is advocating integrated, ecosystem approaches to the conservation of biodiversity.
  - The Framework Convention on Climate change: concerned with preserving or re-establishing forests as carbon sinks and, to a lesser extent, with the problems of the adaptation of forests and other ecological systems to the impacts of climate change.
  - The Convention to Combat Drought and Desertification: concerned with the maintenance or re-establishment of perennial vegetation to protect soils etc.
  - The UN Forum on Forests: focussing principally on sustainable management of forests but increasingly seeking to exploit synergies with the other processes and address the wider issues of forest conservation and sustainable use.

  All of the above, with the exception of the UNFF, have SBSTTAs - Subsidiary Bodies for Scientific, Technical and Technological Advice. However with the exception of the FCCC these bodies have not commissioned independent research. The research inputs into the processes have therefore come principally from a

small number of ARIs in Europe and N. America. ***This research has tended to see forests in developing tropical countries as simple biophysical systems and to ignore the complexity of the human use, rights and knowledge of these systems.***

- **Second,** a need to respond to the increasing realisation that forests are an important part of the life support systems of many poor people in the developing world. This need has received some impetus from the recently published World Bank Forest Policy that gave heavy emphasis to the importance of forests as resources for poor people. The main work on these issues is being conducted.
  - By development and humanitarian NGOs such as CARE International, IUCN etc who have networks of projects dealing with local forest conservation and management problems.
  - ICRAF and CIFOR who have both made major inputs to the deliberations of the World Bank and have taken the lead in exploring the relationships between forests and poverty.
  - Activist and advocacy NGOs such as Global Witness who have been focussing on the injustices caused by corruption and poor governance in the forest sector and the negative impacts that this has on the well-being of forest dependent peoples.

  There is now widespread agreement that forests are very important resources for up to 1.2 billion very poor people.[1] This realisation is coming at a time when for many different reasons there is a tendency to devolve management of natural resources to lower levels of government. This represents a major paradigm shift from the mainstream forestry tradition that forests were managed primarily for their public goods values - timber for the navies of expansionist European powers and hunting for the royalty - and secondarily for their local values - firewood and non-timber products for the peasants.

  Forestry has always been confronted with this divergence between local and higher level management needs. The higher-level needs are now seen differently - carbon sequestration and biodiversity instead of timber and hunting. Legitimate local needs now include the economic benefits from timber as well as subsistence needs. The recognition of the desirability of devolving much more forest management responsibility to local communities is now running ahead of the ability of governments to put into place land tenure and resource access rights arrangements. There are many examples of compromise or transitional situations where local people are given responsibilities but not the rights to exercise them or where the complexity and overlapping nature of local rights results in uncertainty and power vacuums. Many countries are suffering from serious depletion of forest resources as a result of these difficult periods of transition.

  A simple characterisation of the present situation is that we are in a period of transition. We are moving between two paradigms. Under the old paradigm most

[1] There is a lot of polemic about how many poor people are dependent on forests and to what extent they are dependent. Many of the discrepancies in the positions taken by different parties are based on semantics and on the question of degrees of dependence and degrees of poverty. It is however beyond dispute that very many people are highly dependent on forests but they are not necessarily the poorest of the poor and forest-based development does not necessarily provide the quickest route out of poverty for these people.

forests are managed primarily by the state for the national interest with some use-rights given to local people. Under the new paradigm most forests are to be managed primarily by private individuals or communities with some regulatory provision or incentives to ensure the maintenance of the public goods values of the forests. The term co-management is commonly used to describe the latter situations.

One can postulate two contrasting and divergent tendencies in forest management:

- **Integration:** In response to the devolution of forest management a general tendency towards smaller management units, less uniformity of management, greater degrees of change over time and from place to place in the objectives of management and a larger number of multiple objectives for any single management unit.
- **Segregation:** In response to the pressures of global economic forces and the integration of markets a tendency towards specialised single use forests as manifest in very high yielding single clone plantations to meet industrial timber needs. Economic efficiency will favour the aggregation of management units - thus the global pulp and paper industry is rapidly being consolidated into the hands of a small number of multi-national conglomerates. Under this scenario conservation of biodiversity and sequestration of carbon will also be achieved in areas of "single-use" land set-aside specifically for these purposes (national parks and equivalent reserves).

There is a divergence between the rhetoric of international and national discourse. Inter-governmental processes are in general favouring the multiple-use, integrated scenario. Economic rationality is pushing in the direction of the segregated, single specialised use scenario. This divergence is just as apparent in the industrialised world as it is in developing countries.

These divergent scenarios have different implications for the poor in developing countries. Their shortest route out of poverty may lie in industrial employment in the economically efficient segregated scenario. However, even if this is ultimately happens many people will not make this transition for a long time. These people will likely continue to live in a situation where forests contribute in numerous ways to their lives in an integrated forest-agriculture mosaic.

One conclusion of this analysis is that many of the issues confronting us in defining future forest research needs are similar to those confronting the agricultural sector. Will the management of forests evolve in the same way as the management of major commodity crops with industrial corporations taking the lead in research and development? Is the smallholder subsistence farmer with his diverse cropping system and his patches of woodland destined anyway to be absorbed into the global economic system? Will forest dependency be an issue for marginalised people in failed states or those that fail to make the economic transition?

MARGINAL IMPROVEMENTS TO THE CGIAR RESEARCH AGENDA

The above considerations can be used as a basis for adjusting the research agenda of the CGIAR. But most of these issues have been debated exhaustively and are

already taken into account in the strategic plans of the centres dealing with forests (CIFOR, ICRAF, IPGRI, IITA, CIAT and to a lesser extent ICRISAT, ICARDA and IWMI). If one pursues the logic of incremental adjustment of research agendas then the following represents one view of the present needs for change.

Forest plantations: There would appear to be little role for the CGIAR in dealing with large-scale industrial plantation forestry. Plantation companies have their own research capacities and there is considerable capacity in NARs and in ARIs to provide such research support that they cannot provide for themselves. Plantation forestry is mainly an issue for the poor when it competes with them for land.

Logging natural forests: Industrial scale logging of natural forests is also well supported by the research capacity of the NARs and ARIs. The issues for the poor again relate to their exclusion from areas where they have traditionally used the forests for multiple local products and services. There are important research questions related to multiple use forests where industrial logging is just one of the uses. There are many examples of ownership or management responsibility for forests being transferred to private individuals or communities and there will be research needs to develop management systems for these situations. NARs capacity to do this sort of research is limited - except perhaps in South Asia.

Smallholder forest systems: There will be a need for research to support smallholder forest management systems and management systems for fine scale forest - agriculture mosaics. No alternative supplier of this research apart from the CGIAR appears to exist. Many examples could be given of areas where considerable scientific uncertainty exists or where management systems need to be developed. For instance:

- Support for small-scale producers of mixed tree crops. These lie at the boundary between the complex agroforests of ICRAF and CIFOR's natural forests under intensive local management. These systems span an enormous range from home gardens through to the extractive reserves of Amazonia. Traditionally ICRAF has focussed on the cultivation and improvement of individual tree species and CIFOR on issues of governance. Both centres have worked on the environmental services provided by these systems.

- Problems of managing forest - agriculture mosaics. There is much discussion at present of "landscape approaches" to conservation. The MEAs with encouragement from conservation NGOs are advocating the integrated management of large complex landscapes in order to achieve a balance between production functions and conservation. This is an evolution from the previous generation of integrated conservation and development projects-ICDPs. If not based on sound science this new generation of integrated projects could be just as disappointing as the ICDPs that preceded them. Specific research issues include:
    - New sorts of integrative institutions for science-based management of landscapes to replace sectoral institutions.

    - Better understanding of the optimal extent, type and disposition of forests to meet production and environmental needs - for instance to produce food and to preserve biodiversity.
    - Techniques for calculating the value of the environmental services provided by the forest patches in complex landscapes.

- Measures to allow for management of any forest for multiple products and services and in particular ways in which the provision of environmental services can be a profitable occupation for poor forest dwelling people. This requires measuring the performance of forests as providers of environmental services and then the development of equitable mechanisms for making the necessary payments.

- Processes for managing forests "adaptively". Foresters have talked about adaptive management for decades but it is still far from being a reality. Adaptive management requires measures of system performance and participatory processes for tracking these indicators and adapting management accordingly. This will require multi-disciplinary approaches bringing together management scientists, social scientists and biophysical scientists.

THE CGIAR AS AN AGENT OF CHANGE IN NARs AND ARIs

The real issue for the CGIAR is not to define research needs at a high level of abstraction but rather to redefine the relationships between CGIAR researchers, researchers in the NARs and ARIs and the users of the resource. The modern problems of forests require that these relations be changed. The CGIAR has a distinguished history of action research at the level of the farm. What is now needed is action research at a much larger scale and involving a greater diversity of actors. It is action research at the landscape level. CGIAR scientists can only support this kind of work to a very limited extent but they can play a significant role in helping the NARs to fill this niche.

The proposal for a challenge programme entitled "Forest as resources for the poor" put forward by a consortium including IUCN, CIFOR, ICRAF and WWF is a proposal for transforming relationships. It would be based upon a network of sites where new sorts of institutional arrangements would be developed both between research and management agencies, conservation and development agencies and researchers and local resource users and managers. The approach advocated in this proposal pre-empts the need for ex-ante research priority setting. The research agenda emerges from the interactions amongst the partners in the process. And just as management will need to be adaptive in this situation so the needs for research will change constantly and the research agenda will be constantly in need of updating.

There is a natural tendency for forestry research to concentrate in areas where there is a lot of forest. The irony is that for poor people the needs for innovative approaches to forest management and governance are probably more concentrated in areas where forests have become a scarce resource. Restoration of forests in a way that provides multiple benefits to the poor - products, employment, environmental services - is an emerging field where research capacity is weak and the CGIAR could well expand its activities. This sort of work will almost always need to be conducted in the context of

a forest - agriculture mosaic - and thus requires integrated approaches that include contributions from the agricultural centres.

SUMMARY

Some KEY emerging issues where research could improve the livelihoods of forest dependent people are:

1**: Multi-functionality**: How to manage the same piece of forest for a mix of local production functions plus environmental service functions at various scales - local to global. How to measure and cost the production of this product and service mix?

2**: Institutional transformation** - the move away from "state forests" towards a wide range of corporate, local, co- and community management situations. (These can be seen in a matrix with the first point about multi-functionality).

3**: Integrated landscapes** - Getting the optimal extent, type and location of forests in the landscape in order to achieve an optimal product and service mix whilst minimizing the opportunity costs for other users of the land.

4: **Restoration.** - There is a real need to develop more integrated, multi-functional approaches to restoration and to get away from approaches that cover the landscape with mono-cultures for ill-defined environmental objectives-

5: **Achieving durable, multidisciplinary, multi-agency relations involving the CGIAR, NARS and resource management agencies**. The CGIAR could act as a convenor and facilitator of teams and could help to bridge the gaps between users of research and researchers. The CGIAR could lead a transformation of research culture (a paradigm shift) towards real-life-scale participatory, action research.