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**NATP**

**Task Force on  
Prioritization,  
Monitoring &  
Evaluation**

*PME notes*

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## The new paradigm for agricultural research

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*December, 1998*

The NATP is about a "new paradigm" for agricultural research and management. Over the last two years, many colleagues have asked: "What was wrong with the old paradigm? Our past work has won world acclaim. Why change a system which has delivered in the past? Yes, there are problems with the system, but we know how to fix them. What is needed is committed support at the highest level. What is this new paradigm and what is the need for it?"

These and similar doubts often haunt bright, well-meaning researchers. The problem is that the new paradigm largely originates from management, economic, and social concerns. Most of us are not trained to follow these percepts. Hence the doubts and confusion. As a social science institute within the Council, NCAP has to help in resolving these misgivings.

It is a fact that our basic job remains the same. We identify a problem and seek its resolution through scientific methods. The main points of departure are three- the way we identify and define a problem, use of externalities to enrich the power of our methods, and the definition of our end product.

### PROBLEM IDENTIFICATION

Traditionally, we have used our knowledge and experience for problem definition. Most experienced researchers have a good idea of the constraints (in their field of specialization) which limit yields or productivity, and are able to translate these into research questions.

- In the new scheme, the rich qualitative judgement is supplemented by quantitative analysis. The constraints have to be defined in terms of economic rationale and range of national objectives and then prioritised. This is necessary if we want to ensure that research resources are not diverted to low priority areas. Research managers now face a more stringent funding environment and need objective criteria to make resource allocation decisions.
- Any change in technique affects not only the component (crop or resource) being studied, but the entire system within which the component is

embedded. In fact, the observed constraint may arise from other parts of the system. Therefore, it is necessary to view constraints in a "systems" perspective. Otherwise, our research results may become irrelevant.

- To do so effectively, it is necessary to supplement researchers' knowledge with empirical socio-economic information at the field level. This is what we mean when we say that research problems must be need-based—farmers' involvement in need identification is critical. This requires social sciences skills. The same are also needed to interpret market-driven research needs. In short, problem identification for research has to be a participatory process with the stakeholders. This has been implicit in the past, we now have to make it explicit and credible. That is the reason why emphasis is placed on diagnostic and participatory rural appraisals for defining the production systems research agenda.

### COMPLEMENTARITIES

The second theme of change is exploitation of externalities—reaching out and drawing from outside our disciplinary, institutional, and locational domain. There are several dimensions of this.

- Applied agricultural research has to transcend disciplinary and component boundaries - the familiar mode of organising research in the past. There is enough evidence to commend multi-disciplinary and systems approach. This is a major plank of the NATP initiative.
- The other dimension is multi-institutionality, encompassing not only sister research (national and international) institutions, but also relevant non-research institutions (government, private, NGOs). This is necessary to improve the relevance, quality, and effectiveness of the research system. It builds and widens the constituency supporting public investments in agricultural research.

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PME is a major theme of the National Agricultural Technology Project (NATP). PME notes are meant to disseminate concepts and information regarding this activity. Please address comments, questions and contributions to Dr. Dayanatha Jha, Chairman of the Task Force and Director, NCAP.

- Technology assessment at farmers' fields has now to be viewed as an integral part of the research process, and not as an extension activity. The process has to be participatory but internalized as a research activity.

## IMPACT ASSESSMENT

Finally, research management now insists on impact as the end product. Our ability to deliver on promises will be subjected to greater scrutiny and will influence future funding. It will no longer be enough to produce an improved cultivar or a research paper, and close the project. Visible and verifiable impact at the field level is now increasingly demanded. This is what is meant by accountability. This is to be achieved in the NATP by explicitly including real world field trials (under technology assessment and refinement-TAR) as part of all production systems research, and through systematic impact assessment.

There are thus three basic mantras of the new paradigm- need-based (demand driven) research in a system mode, exploiting inter-institutional complementarities, and accountability. The change from the traditional style is depicted in the table below.

### Changes in research-related processes under NATP

Process	Conventional	New approach
Problem Identification	Researcher-driven, knowledge and experience based, usually technically defined	Participatory, based on diagnostics in target domain, inclusive of socio-economic dimension
Prioritisation	Based on scientific judgement, subjective, peer determined	Participatory with stakeholders, scientists, peers, analytical and objective
Approach	Component-specific, discipline-based, on-station	Component in system perspective, multi-disciplinary, inclusive of TAR
Organisation	Single institution	Multi-institutional, Program/PI-led
Final output	New product or information	Adoptable new product or information
Evaluation	Scientist-centered, on technical merit	Program-centered, impact in the target domain

Implementing this paradigm change is a challenge because it does not match with our training, with the way research is presently organised, and with tradition. That is why new organisation and management systems are emphasised under NATP. The other major difficulty arises from very weak capacity and skills in social science research. To implement the proposed processes, close involvement of social sciences, particularly economists, is absolutely essential.

Essentially, the new paradigm implies a different way of doing business. Client needs are paramount in selecting a research problem. These needs may arise from technical or socio-economic factors including market forces. To be able to do so, a clear idea of the relevant client domain is essential. All researchers must interact with clients and develop first-hand knowledge of the technical and socio-economic features of the target domain. Secondly, the processes of problem selection and evaluation of research must be objective and analytical. This ensures that research is directed towards priority problems, and that its end product has impact at the field level

As researchers, we are trained to anticipate future problems and plan ahead. We should be able to see the writing on the wall so far as future funding for agricultural research is concerned. We have to convince the society that we know what the real problems are, that we are putting available resources to the best possible use, and that our work is making a visible impact. And all this must be objective and substantiated. This applies to the entire research system—NATP will serve its purpose well if it initiates this change in the mindset. It is particularly relevant for young scientists who have a long way to go. It is more difficult for those who have put their best years behind them and would like to retain the status quo. The biggest challenge perhaps is to convince our seniors and even peers that past approaches and methods need to be changed.

Obviously, this will need changes in organisation and management of agricultural research at ICAR and SAUs. If we want researchers and research programmes to be oriented differently, the institutional framework must also be suitably modified. The Council is conscious of the need and the Task Force on Organisation and Management is addressing this.

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