

Annex 1. A Review of Research Impact, Responsiveness And Future Priorities in the Agricultural¹ Sector, Nepal: Concept Note and Terms of Reference

Background – The Concept

1. It has been recognised that the existing structure and organisation in the agricultural sector is not wholly effective at responding to national demands for agricultural growth or the individual needs of the rural poor. At the same time, it is widely acknowledged and accepted that development of the agricultural sector is a key component in national economic growth.
2. Current national agricultural research policy and plans aim to address some of the issues, but there is a lack of solid information on the impact of past research, and the manner in which the various elements of the sector, both public and private, interact to deliver and address the needs of the rural population.
3. In order to gain a measure of the impact of past research on rural livelihoods, identify key priorities for the medium-term future, assess the placement of agricultural research in the present and future agricultural policy and institutional environment and to validate (assess the appropriateness of) the current shift in the Nepal Agricultural Research Council's (NARC) approach, the National Planning Commission (NPC), through the Ministry of Agriculture and Co-operatives (MoAC), undertakes the current review with the assistance of the Agricultural Perspective Plan Support Programme (APPSP).
4. The present study builds on the initiatives taken with regard to the re-organisation of NARC and its current change management process and derives from discussions and recommendations from NARC's Council, chaired by the Minister for Agriculture and Co-operatives.
5. The immediate outputs of the study will feed into the Review of the APP Implementation and the formulation of a APP Implementation Action Plan, as currently decided by the National Planning Commission and implemented by the MOAC through the APPSP, which will contribute to the re-orientation of the agricultural sector, in order to create more responsive, productive services for the rural poor by developing new ways to access agricultural services and markets.
6. The proposed review will provide information, analysis and recommendations that will contribute to the coherent planning and implementation of these developments. It should also provide the material necessary for similar work to start in other areas of the sector, most notably provide insight on the changes required for the more effective functioning of the agricultural sector, like agricultural extension and the strengthening of public-private partnerships. The latter will provide useful opportunities to address issues raised by membership of the World Trade Organisation (WTO). A strong commitment from all stakeholders is an essential prerequisite for the actual and coherent implementation of the study outcome and recommendations

¹ In the context of this note, Agriculture will include all commodities, including livestock, horticulture, fisheries, etc. and other aspects of rural livelihood as in the domain of APP, PRSP and National Agricultural Policy

7. The Review will be performed in the context of the Agricultural Perspective Plan (APP), 10th Development Plan (PRSP) and the recent National Agricultural Policy. It will consist of three parts:
 - a. Quantification of the impact of agricultural research on rural livelihoods, since 1990 (past);
 - b. Validation (assessment of appropriateness) of NARC's current strategic plan and approach to change management (present);
 - c. Institutional and management analysis of national agricultural research and identification of broad priority areas on which future research activities and MoAC should focus (future) in line with the general policies and strategies and addressing the poverty reduction objectives in particular, outlined for the agricultural sector in the above mentioned policy framework.
8. From the study, recommendations will be derived for institutional adjustments, required to enhance the impact of agricultural research in order to create an enabling environment for pro-poor agricultural research impact. Some of those will be 'within' research itself, such as better prioritisation, better research planning and conduct etc., but others will be beyond research and will relate to such issues as effectiveness of coordination between organisations, or the extent to which policy and services currently support research uptake.
9. A multi-national Team comprising an Agro-economist, social development specialist and agricultural/livestock research, extension and evaluation specialists, will implement the following terms of reference over a period three calendar months.
10. The following sections cover the terms of reference for implementation of the review.

Terms of Reference

General

11. Key to the approach to be adopted by the Review, is the role that agricultural research has played in the past, and is aiming to play in the future, it's place in the wider agricultural policy context, taking into account the roles and interaction of the various stakeholders including policymakers, farmers, extension services, research and the private sector and the objectives for equitable development and poverty reduction mentioned in the current policies.
12. The principal agricultural research organisation in Nepal, is the Nepal Agricultural Research Council (NARC).
13. NARC was created by His Majesty's Government of Nepal [HMGN] under an Act of Parliament in 1991². It is an autonomous institution with a national mandate, through the Act, to :
 - a. *Make, or cause to make, high level studies and do, or cause to do, research in the agriculture sector;*
 - b. *Find out the measures for solving the problems of the agriculture sector;*
 - c. *Render necessary assistance to His Majesty's Government for the formulation of the national agricultural policy.*

² Nepal Agricultural Research Council Act 2048 [1991]

14. The functions, duties and powers of NARC are:
 - a. *To make, or cause to make, high level studies and to do research on various fields of agriculture within the framework of the national agricultural policy.*
 - b. *To determine the priority of the studies and research related with agriculture.*
 - c. *To provide, or cause to provide consultancy services and the research assistance in regard to the field of agricultural research.*
 - d. *To co-ordinate, follow-up, review and evaluate the agricultural research activities carried out in the Kingdom of Nepal, or cause to do so.*
 - e. *To keep up to date records of the agricultural research activities.*
 - f. *To do, or cause to do, other works necessary for, and related with, agricultural research.*
15. Funding for NARC comes in an annual budget allocation from HMGN, with additional support from donors, other external sources of funding and limited internal revenue generation.
16. Agricultural research in Nepal has remained primarily a public sector undertaking. In recent years, however, new research service providers have emerged in the private and NGO sectors and new funding mechanisms (NARDF – competitive grants) have been adopted. This has broadened the range of potential researchers outside the public sector.
17. In response to this and other factors, NARC has developed a vision for the future of agricultural research in Nepal until the year 2021³, referred to as *Vision 2021*. This document outlines a broad strategy for addressing the agricultural research needs of Nepal, and has been approved by the NARC Council.
18. The *Vision 2021* sees, amongst other things, the development of an independent, lean, efficient and focussed research implementing agency.
19. In order to address an inherent and acknowledged weakness in its processes of research planning, implementation, monitoring and evaluation, NARC has, since mid-2003, been developing a structured approach based on the logical framework.
20. Three levels of complexity are recognised. At the overall *Institute* level there is a need for a clear strategy supported by *Programme* level initiatives which manifest themselves as *Project*-level activities.
21. An initial Workshop⁴ developed a draft framework for one of NARC's two key programmes (Crops and Horticulture Research), as a step in the process of organisational development. This was followed by one which developed a framework for the institute, which also serves as its *strategic plan*⁵. This nests with the higher level plans of the MoAC and Government, as well as encompassing NARC's own programmes and projects.

³ Vision 2021 - Agricultural Research for Sustainable Livelihood Improvement, Nepal Agricultural Research Council, 2002.

⁴ Logical Framework Programme Planning Workshop, Crop and Horticulture Research Programme, Dhulikhel, 23-28 November 2003. NARC, 49pp

⁵ NARC Strategic Planning Workshop, Dhulikhel, 30 January-3 February 2004. NARC, 67pp

22. A full explanation and the nature of the *paradigm shift* required in NARC's operations is given elsewhere⁶. The Strategic Plan provides a clear means of planning, monitoring and implementing research so that limited resources are utilised to the greatest effect, and benefit of the rural poor. The approach, developed in consultation and collaboration with senior stakeholders, marks a significant departure from NARC's current operating practice and strategy, with a greater focus on deliverable outputs that are coherent with NARC's mandate and government plans. The Strategic Plan has been approved by the NARC Executive Board but is yet to be formally accepted by the full Council and Government.
23. Key to the strategy is a focus on **impact** through five well defined outputs, and **accountability**, through the development of a monitoring and evaluation system based on indicators incorporated in the institute's logical framework.
24. Most recently a workshop was held which looked at the implementation of the changes necessary to effectively implement the strategic plan⁷. It was the third in a series that has seen the facilitated development of logical frameworks at programme and institutions level, and the growing awareness amongst key NARC staff and stakeholders of the new way forward for NARC as a public sector organisation intent on poverty reduction and support of the rural poor.

Specific

A *Impact of agricultural research on rural livelihoods*

25. The objective of this element of the review is a quantitative and qualitative assessment of the impact of agricultural research for the rural population in general and the poorer section in particular, by scrutinising financially significant research programmes (>Rs 1.5 million/year or programmes more than 5 years old).
26. The assessment should be in terms of the financial and other benefits to rural households disaggregated by socio-economic group, measured as increases/decreases in appropriate household indicators, against baseline information drawn from appropriate national and local sources and against cost-effectiveness data
27. This may be done through desk studies of published data, such as the reviews at Lumle and Pakhribas⁸ and other government and non-government information sources, interviewing and drawing data from the various stakeholders, and as field assessments in targeted areas.
28. The review should identify successes and failures resulting from agricultural research, and quantify where possible. The reasons and causes for success and failure should be carefully documented.
29. In reviewing the impact of research the following issues should also be addressed, and their contribution to success or failure measured/assessed:
 - a. Mechanisms for the identification of the need for the research programmes;

⁶ Briefing on Strategic Plan – Logical Framework. February 2004. NARC, 18pp

⁷ Change Management Workshop, Godavari – Nepal, 30 April – 3 May 2004. NARC, 58pp

⁸ *The Social and Economic Impact of Research done at Lumle and Pakhribas Agricultural Centres in Nepal*. ODA, June 1995, 186pp **and** *An Analysis of Research Management at Lumle and Pakhribas Agricultural Centres in Nepal*. ODA, June 1995, 97pp.

- b. Mechanisms for monitoring research performance, impact assessment and feedback into policy revision
- c. Mechanisms for transfer of technology, up-scaling and uptake pathway identification;
- d. Mechanisms for identifying priority clients and gaining a disaggregated understanding of different categories of clients
- e. Mechanism for effective research education interface through study of the functional and institutional arrangement of research education interface in India.
- f. Identification of knowledge and information flows at the time of research implementation and afterwards;
- g. Did (or do) mechanisms for articulation of demand exist that research can link with, what systems are in place for field extension staff to communicate with researchers;
- h. How has the performance, organisation and institutions of the public sector (including for example policymaking, services, and the extension system) affected the impact or potential impact of research findings;
- i. To what extent has bottom-up planning been institutionalised and made a significant part of successful impact?

B *Validation of the current approach to agricultural research and extension*

- 30. NARC is currently undergoing an organisational and institutional change process. This is well advanced and aims to address past concerns over impact and technology uptake. It is recognised however, that the process may not be perfect and the Review offers an opportunity not only for further improving and guiding the process, but also for adjustment to the new National Agricultural Policy framework and for drawing in other key stakeholders within the wider agricultural sector.
- 31. To what extent does NARC's current strategic plan and approach address issues identified in *Part 1* of this review? How can these initiatives be made more effective?
- 32. Does the *core function analysis* being implemented by NARC sufficiently address the key issues and constraints identified in *Part 1* of the review, and would such an approach be appropriate in the wider context of the agricultural sector and improved service delivery?
- 33. Agricultural research cannot exist in a vacuum and needs to link closely with government objectives and, primarily, the needs of farmers and rural people. To what extent do the APP and PRSP play a role in current planning and implementation for agricultural research in general and for NARC particularly, and across the non-research elements of the sector?
- 34. What will be NARC's role in the wider institutional context of agricultural research and what would be the mechanisms for coordinated approach in the light of the institutional reform agenda of the HMGN?
- 35. What initiatives are currently being implemented by non-research elements in the agricultural sector to support efforts to improve MoAC's impact on rural livelihoods. Including, *inter alia*:
 - a. Incorporation of impact reviews into planning process;

- b. Improvement of cross-sectoral co-ordination;
- c. Mechanisms for knowledge sharing;
- d. Mechanisms for addressing constraints preventing impact;
- e. Strategic planning in non-research elements of the sector;
- f. Coherence with national policy in the agricultural and related sectors;

C Identification of medium-term priority areas at regional and national levels

- 36. Creating a significant impact at both national and household levels requires identification and response to local, regional and national demands, priorities and opportunities. What are seen as the main constraints to significant empowerment at district level and below, and how may these be addressed within the sector?
- 37. Integration of research and other agricultural development oriented activities is essential in order to identify and meet the various priorities at different levels. What mechanisms need to be in place to ensure collaboration and effective communication between farmers, village, and district level demands, among the various actors in agricultural research and between the sub-sectors research and extension?
- 38. Assessment of priorities taking into account the institutional and management aspects of agricultural research and extension linkage in the current developments at institutional and socio-economic level, including the roles and functions of other actors, like for instance agricultural educational institutions.
- 39. What balance of changes to research itself, research organisations, and the wider policy and institutional environment in which research takes place is needed to enhance the impact of agricultural research?
- 40. Taking into account the opportunities and challenges provided by accession to the WTO, SAFTA and other trade-related policies, what are the medium-term priorities for agricultural research? This process should feed into recommendations on new approaches for communication and co-ordination across the agricultural sector (see 36) and be conducted in close collaboration with the other National level review activities and NARC's own initiatives in this area.

Review Team

- 41. The Review Team should be both multi-national and multi-disciplinary, with the overall leadership coming from an international consultant (firm). The International Partner will have a mentoring and guiding role and should possess the following qualities:
 - Proven experience in review and strategic planning of national policies and programmes in the agricultural sector
 - Proven experience in institutional management and change processes
 - Extensive experience in Impact Assessment
 - Current knowledge of Nepal's agricultural sector and policy environment
- 42. A national partner or partners, either as individuals or as a company, should be an integral part of the Team composition.

43. Extensive knowledge of Nepal, its policy framework to address poverty and agriculture, and current trends, changes and processes within it, is considered essential for both national and international members of the Team.
44. Individual members should have a minimum of 10 years experience of strategic planning level and organisational change management with a background in agriculture. They should have the ability to work in a multi-national team and the commitment and ability to produce pragmatic and workable recommendations. In addition they should have specific skills in one or more of the following disciplines/areas of expertise:
 - (Agricultural) Policy Analysis
 - Institutional Development and Institutional Change
 - Impact Assessment, Monitoring and Evaluation
 - Agriculture and Livestock Research
 - Agriculture and Livestock Extension
 - Agriculture and Livestock Economics
 - National and International Marketing and Trade of Agricultural Products
 - Social, Livelihood and Rural Poverty Analysis
 - Participatory Approaches and Stakeholder Involvement
45. Whilst it is recognised that the individual composition of the Team may vary during the Review period according to the issues being addressed, it is essential that the Team retains at least one member, designated as the *Team Leader*, for its full duration to ensure continuity and co-ordination of the inputs and results.
46. In addition to the necessary and appropriate technical skills and competencies to contribute to the Review itself, the *Team Leader* will also be expected to have at least ten years of experience successfully leading multi-national and multi-disciplinary teams and producing clear, concise and pragmatic recommendations.
47. The implementation of the APP Review mentioned earlier on in this document, is likely to take place in approximately the same time frame. This offers the advantage of capitalising on the opportunity for adjustment and coherence of this study with the wider policy framework. It deserves recommendation to maintain close contacts with the team that implements the APP Review and it would be an advantage if the international member(s) of the team would be the same for both studies. However both reviews will be undertaken under independent contracts and the teams will operate independently.

Review Steering Committee

48. A *Review Steering Committee* will be constituted, comprising:
 - a. NPC Member (Agriculture) – Chairperson
 - b. Secretary, MoAC
 - c. Joint Secretary, MoAC
 - d. Executive Director NARC
 - e. Member Secretary NARDF
 - f. Executive Director AEC / FNCCI
 - g. NGO Representative

- h. Representative DFID (Rural Livelihoods Adviser / APPSP Adviser)
 - i. Programme Manager APPSP – Member Secretary
49. The function of the Committee is to guide the implementation of the Review, and facilitate, as appropriate, access to key stakeholders and organisations.
 50. The Committee will meet as and when appropriate to receive reports of the Team or discuss/adjudicate on any issues arising from the Review; it will report to the Minister of Agriculture and Co-operatives in his capacity as Chairman of the NARC Council and CADIC.
 51. The Committee will be empowered to co-opt additional members as and when it deems necessary in order to help guide the implementation of the Review

Deliverable outputs

52. In addition to addressing each of the specific issues identified above, the Review Team will, in the light of its findings, make **practical recommendations** in the following areas:
 - a. *Should the strategic planning approach currently being adopted by NARC be modified to improve the organisation's impact on rural growth and poverty elimination? This should utilise the information generated by the impact assessments and the detailed analysis of the successful and unsuccessful research initiatives previously addressed by NARC.*
 - b. *How can the planning and activities of the research and non-research elements of the MoAC be better oriented to link with, and support, both research and end-users so that overall agricultural service delivery and impact is enhanced? This should build on the identification and detailed analysis of successful and unsuccessful horizontal and vertical linkages and partnerships.*
 - c. *What should be the broad-level medium-term priorities and resource allocations, in the context of the APP, PRSP, National Agricultural Policy and articulated demand from stakeholders, particularly farmers and rural households, for agricultural research in general and NARC in particular? It is important that policy issues and recommendations are derived from an in-depth analysis of the needs of a cross section of actors and stakeholders.*
53. All recommendations should be discussed with stakeholders and be built on a consensus view.

Timing

54. The Review will start on, or as close as possible to, the 1st February 2005 and run for a period of three calendar months.
55. Timing of specific inputs will be decided by the Team Leader in consultation with the full Team and the approval of the *Review Steering Committee*.

Reporting

56. The Review Team will report directly to the *Review Steering Committee through the Member Secretary (Programme Manager APPSP)*. Hard and electronic copies of reports are required, and it is expected that the Team will make *PowerPoint®* presentations of salient points to the Committee, at each stage.
57. An *Inception Report* will be submitted within 14 days of the official starting date of the assignment, which will give details of the workplan for implementing these terms of reference, and any minor amendments to the documentation resulting from the *Stakeholder Co-ordination Workshop*, organised by the NARC Change Management Team, which will have developed a consensus view of the approach to be used.
58. An *Intermediate Report*, will be submitted after eight weeks, which will include preliminary/partial results of the impact study and validation elements of the Review, as well as an indication of the programme for the delivery of the third Output.
59. A *Draft Final Report* will be submitted after 11 weeks, to the Committee in the first instance, followed by presentation, after consultation, to a wider range of stakeholders.
60. A *Final Report* will be submitted at the end of the consultancy period, this will take into account all the relevant comments of stakeholders, and be formally submitted to the Committee in hard copy and as a presentation.

January 2004

Logical framework

Title: Review of research impact, responsiveness and priorities in the agricultural sector

Date Prepared: 23 September 2004

Dates for implementation: 1 February to 30 April 2005

Country: Nepal

Cost: £40 to 50,000

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Risks and Assumptions
Goal More responsive productive services for the rural poor.	Livelihood indicators show positive and attributable response to agricultural sector initiatives by 2007.	Reports of the CBS.	
Purpose Improved agricultural policy and access to responsive agricultural services and markets for the rural poor.	Increased demand for agricultural services. Markets increase in scale, scope and distribution.	MoAC annual reports. Reports of the CBS. FNCCI reports	Conflict situation does not restrict movement, markets or impair infrastructure.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Risks and Assumptions
<p>Outputs</p> <p>1. NARC's strategic plan implementation improved through information and knowledge on impact and partnerships.</p> <p>2. Improved planning and activities of non-research elements of the MoAC better supporting both research and end-users to enhance overall agricultural service delivery and impact.</p> <p>3. Medium-term priorities, in the context of the APP, PRSP, National Agricultural Policy and articulated demand from farmers and rural households,</p>	<p>1.1 Quantification of impact for a minimum of 5 significant research initiatives completed by April 2005.</p> <p>1.2 Mechanisms for a minimum of 3 successful and 3 unsuccessful interventions identified and described in detail by April 2005.</p> <p>1.3 NARC's Strategic Plan approved and adopted by relevant authorities by April 2005.</p> <p>2.1 A minimum of 3 key areas and mechanisms for improving linkages across the sector identified by April 2005.</p> <p>2.2 A minimum of 3 recommendations for improving the coherence of non-research linkages with NARC identified and implemented by April 2005.</p> <p>3.1 A minimum of five priority areas for agricultural service</p>	<p>Publication of the NARC Strategic Plan.</p> <p>Reports of the Review Team.</p> <p>Minutes of the Review Steering Committee.</p>	<p>NARC has the capacity to respond to new demands from stakeholders.</p> <p>Financial and resource support for the sector is at least maintained at current levels.</p> <p>Infrastructure exists to support initiatives and responses by the sector to demand.</p> <p>The conflict situation allows free movement, markets and information flows.</p>

developed.	focus at national level identified and addressed by April 2005. 3.2 A minimum of two policy recommendations for improving access to markets and agricultural services developed and submitted to government by April 2005.		
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Narrative Summary		Risks and Assumptions
<p>Activities</p> <p>1.1 Stakeholder consultation, as appropriate, at all stages.</p> <p>1.2 Identification and selection of key research initiatives for impact assessment.</p> <p>1.3 Methodology development and implementation of field-based studies of key initiatives, including impact and lessons learned.</p> <p>1.4 Desk-based studies, as appropriate of selected initiatives, including impact and lessons learned.</p> <p>1.5 Data analysis and formulation of recommendations.</p> <p>2.1 Stakeholder consultation on NARC Strategic Plan and assessment of progress, relating to activities 1.1 to 1.5.</p> <p>2.2 Stakeholder consultation on non-research elements in agricultural sector.</p> <p>2.3 Assessment of current initiatives and potential for initiatives in the non-research</p>	<p>Inputs and budgets</p> <p>Technical assistance in the form of a review team comprising international and national specialists on impact, economics, socio-economics, research and extension.</p> <p>Indicative budget</p> <p>Summary Budget Cost [£]</p> <p>International Consultant(s) fees and logistics 20,000</p> <p>National Consultant(s) fees 14,000</p> <p>Local travel and subsistence 5,000</p> <p>Workshops (3) 6,000</p> <p>Publications and incidental 5,000</p> <p>Total</p>	<p>Senior and lower levels of management remain stable.</p> <p>Flexibility to adapt to results exists in NARC and the non-research elements of the sector.</p> <p>Political commitment and will exists to implement recommendations.</p>

sector. 2.4 Development of plans and recommendations for the non-research sector.	50,000	
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Narrative Summary	Inputs and Budgets	Risks and Assumptions
<p>Activities [continued]</p> <p>3.1 Identification of key Districts for stakeholder consultations.</p> <p>3.2 Stakeholder consultation on national and regional priorities.</p> <p>3.3 Review of current mechanisms for demand articulation and links between stakeholders in the agricultural sector.</p> <p>3.4 Identification, with stakeholders, of WTO and SFTA related issues.</p>	<p>See above</p>	

Annex 2. Persons Consulted

In addition to the following list of individual interviewees, 60 other scientists from all divisions of NARI & NASRI were group-interviewed, as were 17 members of the Pokhara Pig Breeding Group.

Acharya, Mr. Shyam Kumar, Agricultural Research Station, Surkhet

Achhame, Mr. Budhhi Bahadur, Regional Agricultural Research Station, Parwanipur

Adhikari, Mr. D.R., SSSC

Adhikari, Mr. Dharma Raj, SEAN, Thankot

Adkhari, Mr. Raghu Nath, Marketing Consultant, NARMA Consultant, Kathmandu.

Anil, K.C. Acting Co-ordinator, IFAD-ICIMOD “Technical Support for IFAD Projects in the Himalayan-Hindu Kush Region”, International Centre for Integrated Mountain Development (ICIMOD), Kathmandu

Ansari, Mr. Md., Agricultural Tools Research Station

Aryal, Mr. Arjun P., Deputy Director, Kalimati Fruit and Vegetable Wholesale Market Development Board.

Bachhar, Mr. Dilip Kumar, Officer, Regional Seed Laboratory, Jhumka, Sunsari

Baidya, Dr. Bal Gopal, New ERA

Bajracharyal, Professor Subarna Lal, Centre for Development and Administration, Tribhuban University, Kirtipur.

Baral, Mr. ?, ADO Office, Pokhara

Baral, Mr. K.P., LIBIRD, Pokhara

Baral, Mr. Tika Ram, Agricultural Tools Research Station

Basnet, Dr. Birendra B., APP Review Team

Basnet, Mr. Bholu Man Singh, NARC

Basu, Mr. ?, Kalimati Market Trader Association, Kalimati Market, Kathmandu

Bennett, Dr. Lynn, Social Development Office, World Bank Country Office, Kathmandu

Bhandari, Mr. N., Director Vegetable Development

Bhattarai, Mr. Yagya Mohan, Lumle Agricultural Centre

Bhattari, Mr. Prakas, Technical Officer, Regional Agricultural Research Centre, Taraha, Sunsari

Bhauki, Mr. Bharat, LIBIRD, Pokhara

Bhujel, Mr. R.B., Agricultural Research Station Tarhara

Bhujel, Ram Prasad, Scientist, Regional Agricultural Research Centre, Taraha, Sunsari

Bhusal, Mr. Siddhi Jeevan, Scientist, Regional Agricultural Research Centre, Taraha, Sunsari

Biggs, Dr Stephen, Visiting Scientist, International Centre for Integrated Mountain Development (ICIMOD), Kathmandu

Bista, Mr. Dinesh B., Programme Director, Agribusiness Promotion and Market Development Directorate, Harihar Bhawan.

Bohara, Dr. K.B., Valley Poultry Pvt. Ltd.

Bohara, Mr. K B., Managing Director, Valley Poultry Private Ltd, Balaju Industrial District..

Budhathoki, Dr. Kedar, Horticultural Research Division

Budhnagariya, Mr. Birendra Prasad, Officer, Regional Agricultural Research Centre, Taraha, Sunsari

Campbell, Dr J. Gabriel, Director General and Chairperson Mountain Forum, International Centre for Integrated Mountain Development, Khumaltar, Lalitpur District

Chaudhary, Mr Bir Narayan, participant farmer in the OR site of Tararha Agricultural Research Station in ward No.2.of Banigama VDC of Morang District

Chaudhary, Mr Dev Kant, Scientist, Regional Agricultural Research Centre, Taraha, Sunsari

Chaudhary, Mr. Achamita Lal, Technical Officer, Regional Agricultural Research Centre, Taraha, Sunsari

Chaudhary, Mr. D.K., Agricultural Research Station Tarhara

Chaudhary, Mr. Dwarika, Agricultural Tools Research Station

Chaudhary, Mr. Indra Bhusan, Scientist, Regional Agricultural Research Centre, Taraha, Sunsari

Chaurasia, Dr. Ram Briksha Prasad, Regional Agricultural Research Station, Parwanipur

Chitrakar, Mrs. Bina Gender Desk Group, Department of Agriculture, Harihar Bhuwan.

Dangol, Mr. N, Kalimati Trader, Kalimati Market, Kalimati.

Das, Dr. A. K., Institute of Forestry, Pokhara

Devkota, Mr. Chandra Kant, Department of Agriculture, Kathmandu

Dhakal, Mr Nara Hari, Agriculture Policy Analyst, APP Support Programme, HMG Ministry of Agriculture and Co-operatives, Kathmandu

Dhakal, Mr. Bhagwan, Agricultural Tools Research Station

Dhakal, Mr. Ram Prasa, Fewa Fisheries Reseach Station, Pokhara

Dhanukh, Mr Joginder, Regional Agricultural Research Station, Parwanipur

Dhaubdel Dr. Shree Prasad, Institute of Forestry, Pokhara

Dhungana, Mr. Dirgh Nath, RD Office, Department of Livestock Services, Pokhara

Dutta, Mr. V.K., Regional Agricultural Research Station, Khajura

Gachhar, Mr. D.K., Seed Testing Laboratory, Jhumka

Gaire, Mr. Yam Kaut, Agricultural Research Station, Jumla

Gauchan, Dr. Devendra, Agricultural Economist/Senior Scientist, Outreach Research Division, National Agricultural Development Council, Kathmandu

Gautam, Dr. H.S., ADO, Sunsari

Gautam, Laxman Kumar, Assistant FAO representative, FAO, Pulchok.

Gautam, Mr. Hem Sagar, Agriculture Development Officer, Inerwa, Sunsari.

Gautam, Mr. Kamal, Monitoring and Evaluation Division, Department of Agriculture, Harihar Bhuwan

Gautam, Mr. Krishna Prasad, Technical Officer, Regional Agricultural Research Centre, Taraha, Sunsari

Gautam, Mr. Tulsi, Senior Planning Officer, Regional Agricultural Directorate, Biratnagar, Morang

Ghale, Mr. Ganesh, Project Coordinator, Winrock International, Nepal.

Ghale, Mr. Madhusudan, Horticultural Research Station, Pokhara

Ghimire, Mr. Janardan, Horticultural Research Station, Pokhara

Ghimire, Mr. S. P., Executive Partner, Valley Cold Store Private Limited, Balaju.

Ghimire, Mr. T.B., Co-ordinator, Regional Agricultural Research Centre, Taraha, Sunsari

Ghimire, Mr. T.B., Jute Research Program

Giri, Mr. Sanjeev, Research Division, Dabur Nepal Limited, Tinkune Kathmandu.

Gurung, Mr. C.R., Director Vegetable Development

Gurung, Mr. Gehendra, Annapurna Conservation Project, Pokhara

Gyawali, Mr. Govinda, Senior Program Officer, Asian Development Bank, NRM.

Gyawali, Mr. Sanjay, LIBIRD, Pokhara

Iswari, Mr. ?, Lumle Agricultural Centre

Jha, Mr Murali Dhar, Technical Officer, Regional Agricultural Research Centre, Taraha, Sunsari

Jha, Mr. N., National Seed Co. Ltd.

Jha, Mr. Prabat, Officer, Regional Agricultural Research Centre, Taraha, Sunsari

Joshi, Dr. B.R, Senior Scientist, National Agricultural Research Council, Kathmandu

Joshi, Dr. Kiran, Planning Division, NARC.

Joshi, Dr. Krishna D., DFID-Plant Sciences Research Programme-Nepal Office, NARC, Kathmandu.

K.C., Mr. ?, Regional Agricultural Research Station, Khajura

Kadayat, Mr. Krishan Bdr, ADO Office, Pokhara

Kaini, Mr Bhairab Raj, Joint-Secretary, HMG Ministry of Agriculture and Co-operatives, Kathmandu

Kaini, Mr. Bhairav Raj, MoAC

Kandel, Mr. Yubaraj, Scientist, Regional Agricultural Research Centre, Taraha, Sunsari

Karki, Dr. Krishna Bahadur, NARC

Karki, Mr Dharendra Kuman, Deputy Programme Manager, APP Support Programme, HMG Ministry of Agriculture and Co-operatives, Kathmandu

Karki, Mr. Madan Singh, Department of Livestock Services, Kathmandu

Karki, Mr. Mukesh, Regional Agricultural Research Station, Parwanipur

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Annex 4. Field Phase Itinerary

Date	Places and Agencies Visited	Participating Team Member(s)
March 19-20	National Wheat Research Centre, Bhairahawa District Agricultural Development Office, Bhairahawa	Gerard Gill, Devendra Chapagain
March 22-24	In Nepalgunj, visiting RARS, Khajura; DADO, DLSO; Chairman of the Agro-vet Association. Interacted with around 60 NARC scientists attending from NARC farms and stations in the Mid-Western and Far-Western Regions attending a regional workshop individually and in groups.	Devendra Chapagain, M.L. Jayaswal
March 29	DLS, DOA, Seed Quality Control Centre, NASRI and Information and Communication Directorate of NARC, Lalitpur	All team members
April 1	Directorates and Disciplinary Divisions of NARC, Khumaltar	All team members
April 5	Interacted with around 70 NARC scientists representing NARI, NASRI and various technical divisions at Khumaltar.	All team members
April 12	SEAN Seed Centre at Thankot, Kathmandu	R.K. Raut, M.L. Jayaswal, Rajendra P. Singh
April 13-15	Valley poultry, Balaju	N.P.S. Karki
April 17	Lumle Agricultural Research Station, Kaski	N.P.S. Karki, M.L. Jayaswal
April 18	Livestock Farm and pig breeding group, Regional Agriculture Directorate, Regional Livestock Directorate, DADO, Pokhara; Nagdanda Milk Production Cooperative, Dhikur Pokhari, Sujal Food Pvt. Dairy, and Private Paravet Clinic, LIBIRD, Kaski; Lumle Agricultural Research Station	N.P.S. Karki, M.L. Jayaswal
April 17-22	RARS, Tarahara; Outreach Research Site, Sunsari, agrovets, livestock cooperative, Morang	R.K. Raut, L.P. Upreti
April 20	IPM farmer school, Mahat Gauda, Institute of Forestry, Annapurna Conservation Area Project, Fish Research Station, Nepal Poultry Entrepreneur Forum, Pokhara	N.P.S. Karki, M.L. Jayaswal
April 27	DADO, Kalaiya; Parwanipur Research Station, Sugarcane Research Station, Parsa	N.P.S. Karki, M.L. Jayaswal
April 27- May 1	FORWARD, Agricultural Research Farm, Rampur, Pragati Pig Farmer Women's Group, Private Paravet Clinic, Jibandhara Milk Co-operative, Chitwan	N.P.S. Karki
April 29	Agricultural Tools Research Station, DADO, Birgunj	M.L. Jayaswal

Annex 5. Subsectoral Policies

Devendra Chapagain

The National Seed Policy (NSP)

The NSP acknowledges the high importance attached by the Agricultural Perspective Plan to good quality seeds and refers to the provisions of the Seeds Act, 2045 and the Seeds Regulations, 2054. Its objectives are to assure timely supply required for different crops, promotion of export, making seed industry effective in the light of international trade and protecting the right over the genetic materials of Nepal. Thus the policy objectives are consistent with the objectives of the APP as well as the requirements of the WTO. Specific policies are envisaged in seven different areas. They are:

- (i) Variety development, covering such areas as inclusion of private sector in variety development, registration and release of variety through a ‘Seed Board’, establishment of variety rights through agro-biodiversity conservation and encouraging joint venture between the national public and private sector entities and international seed entrepreneurs.
- (ii) Seed multiplication that covers the whole gamut of nucleus, pre-basic, basic and foundation seed production; variety maintenance which protects breeders’ rights and specifies a mechanism to produce and distribute seeds including promotion of export of high value seeds.
- (iii) Quality control that recognises quality declared seed system in addition to certified and truthfully labelled seeds.
- (iv) Promotion of the private sector in seed business including announcement of financial support to cover a part of the cost involved in pledging seeds for loan purpose, concessions on local tax and customs duty, provision of training to the private sector entrepreneurs, and provision for the seed industry the same facilities as are provided to priority industries under the Industrial Development Act, 2038.
- (v) Supply management, which includes maintenance of buffer stocks of seed to ensure adequate supply of seed.
- (vi) Institutional strengthening that includes establishment of an institution for seed quality control, and a secretariat for the National Seed Board (NSB).
- (vii) Development and enhancement of national capability for biotechnology and genetic engineering.

The National Fertilizer Policy (NFP) 2002

The NFP was brought to force after HMGN decided to open fertilizer trade to the private sector in 1997. The principal aim of this policy “is to enhance agricultural productivity through improvements in soil fertility, and thereby contribute to the national goal of poverty alleviation”. Its specific objectives are to:

- (a) Create conditions for enhancing fertilizer consumption; and

(b) promote integrated plant nutrients management system for efficient and balanced use of fertilizers.

Its strategies cover four broad areas. These are:

(i) ensuring availability of fertilizers, (ii) greater transparency and competitiveness in fertilizer trade, (iii) quality assurance and (iv) management of an integrated plant nutrient system. The policy is explicit in freeing the fertilizer sub-sector for private sector operation and in allowing market forces to set price. The government retains a limited involvement in fertilizer trade by maintaining a buffer stock of about 20 per cent of the annual forecast demand and through the distribution of fertilizers at concessional rates in the targeted areas. Indeed a separate section has been devoted for “provision of fertilizer at concessionary rates for targeted areas and groups”. Another feature of the policy is to allow co-operatives and the private sector to invest in fertilizer plants in neighbouring countries considering the limited size of domestic demand and scale economies in this industry. As an interim step it allows the private sector to establish fertilizer-blending units by providing the same facilities as are provided to other importers.

Irrigation Policy

Originally approved in 1992, the Irrigation Policy was updated in 1997 and 2004. One of its basic features is its emphasis on a sectoral approach, drawing upon the past experience of the supply driven programme approach. The programme approach did not adequately address the needs of the local farming communities and ignored their participation in project formulation, construction, and operations. This overburdened the government for organisation and management O&M. Reviewing the past irrigation development policy, the World Bank (1997) observed that the previous projects also demonstrated that the self-standing, supply-driven projects did not adequately promote the new participatory approach in small and scattered farmer-managed irrigation schemes (FMISs) and related technical improvements in public irrigation systems throughout the country. As a result, the concept of a self-standing project approach to implement Nepal’s new Irrigation Policy was relinquished in favour of the sector program approach.

To improve the performance of the irrigation sub-sector, the Irrigation Policy stated “...it deems necessary to have construction, renovation, rehabilitation, repair and maintenance and operation of all projects by a definite collective understanding and mutual participation between water user farmers and His Majesty’s Government” (DOI, 1997). For the first time, it defined various levels of irrigation projects, water canals and water users groups. Major objectives of the Policy are:

- To develop fast, manageable, sustainable and reliable as well as environment friendly irrigation systems;
- To carry out programmes for additional new constructions and renovation by mobilising peoples’ participation in irrigation system and projects constructed and operated in traditional manner by the farmers as autonomous bodies in the private sector;
- To mobilise financial resources to cause to carry out repair and maintenance of such irrigation systems and projects by farmers;
- To make the users’ group efficient and strong in connection with the use and distribution of water;
- To gradually decrease government’s responsibility in construction, repair and maintenance and operation by gradually increasing the participation of organised users without adversely affecting their effectiveness in the implementation of irrigation

development projects at different stages and to increase the role and responsibility of organised users in different stages of programme implementation;

- To make legal provision to empower the Users Association to impose and collect irrigation service fees and establishing a system of spending the collected amount in the development and management of agriculture systems in the irrigated area so as to avoid the tradition of involvement of government in renovation of irrigation projects repeatedly;
- To increase the research and training capability in irrigation technology and management system of departmental units; and
- To establish reliability of irrigation services with an objective to increase agricultural production by making cost effective investments in irrigation development and extension programs which are sustainable in view of the technical, financial, institutional and environmental perspective and to realise a better return in a short period and by making the required quantity of water available to farmers' fields at the appropriate time.

The Water Sector Resource Strategy (WSRS) was approved in 2004 and focuses on water resource management and has identified irrigation as the “largest sub-sector in terms of consumptive use of water”. It recognises that “out of a total cultivated area of 2.64 million ha, approximately 1.1 million ha have irrigation facilities of which 0.45 million ha have year-round irrigation facilities”. The strategy while recognising “that agency-managed irrigation systems ... have typically placed too much emphasis on supplying irrigation water, with the expectation that farmers would manage irrigation water by themselves”, the strategy is rather silent on the need to emphasise on-farm water management. The strategy sets targets for the next five, ten and twenty-five years. Low price of farm products, especially rice due to free flow of that commodity from across the border, has been identified as one of the constraints that discourages farmers. The need for integration of irrigation planning with agricultural development has been well recognised, and the need for development of market access has also been emphasised. It has identified “political actions and negotiations regarding import duties and non-tariff trade restrictions” as ‘another action’ which may improve market to Nepalese producers. In addition, it states that “Nepal will utilise all possible commercial and economic tools and techniques to develop improved access to markets for agricultural produces’

Annex 6. NARC: Financial Expenditure and Funding Analysis

Sharad Sharma

Given a budget that has been declining in both nominal and real terms, efficient financial management is clearly increasingly essential. Two questions will therefore be addressed here regarding the research component of agricultural development, namely what financial allocation strategy was followed by NARC in the past, and what financial allocation strategy should be followed by NARC in the future.

The role of NARC has been growing in agricultural and natural research in Nepal in the context of globalization, free market economy and privatization. Its three major objectives are to:

- conduct and/or assign quality studies and research related to agriculture;
- find ways and means to resolve problems in the agriculture sector, and
- provide necessary assistance to HMG/N in formulating national agricultural policy.

In addition to HMG support, several international donor agencies and financial institutions have supported NARC technically. The total annual expenditure (allocated) for NARC for FY 2004/05 is Rs.311.2 million. The main international donor agencies in recent years have been the Japan International Cooperation Agency through KR-II (Fisheries), Department for International Development UK, through the Hill Agriculture Research Project (HARP), the World Bank through Agriculture Research and Extension Project (AREP) and Food and Agricultural Organization (FAO) through Hills Leasehold Forestry and Fodder Development Project. Also several international agricultural research centers are supporting NARC technically to strengthen and develop its human resources and research activities.

However, a survey of financial expenditure allocation of NARC reveals that the proportions of NARC budget both in the national budget as well as in the MoAC budget has declined between 1997/98 to 2004/05. This decline was in absolute as well as relative terms, as the expenditure allocated for NARC declined from Rs.326.4 million in 1997/98 to Rs.311.2 million in 2004/05.

2. Trends of Expenditure Allocation and Funding

2.1 Financial Allocation

Table A6.1 presents the financial allocation for NARC in the national as well as the sectoral budget. It is important to note that NARC's share of the national budget declined to 0.3% in the current year compared a high of 0.53% in 1997/98. This decline has been steady except for the years 2000-2002. This was at a time when the share of agriculture as a whole in the national budget was increasing.

The proportion of NARC budget in national budget is very low (below 0.6% of total). In addition, the proportion of NARC budget to national budget is declining since 2002/03 (Fig.1). Also, the total expenditure amount of NARC is also declining.

Table A6.1: NARC financial Allocation in the National and Sectoral Budget

Particulars	(1997/98)	(1998/99)	(1999/00)	(2000/01)	(2001/02)	(2002/03)	(2003/04)	(2004/05)
National budget	62022294	69693337	77238226	91621335	99792219	96124796	102400000	111,689,900
Budget of Ministry of Agriculture and Cooperatives (MoAC)	2267193	2350968	2857489	3360573	3927556	2423526	2472945	2,692,284
Budget of Nepal Agricultural Research Council (NARC)	326423	315706	372597	486586	577760	297780	300575	311,249
Proportion of NARC budget to National budget (%)	0.53	0.45	0.48	0.53	0.58	0.31	0.29	0.28
Proportion of NARC budget to the budget of MoAC (%)	14.4	13.43	13.04	14.48	14.71	12.29	12.15	11.56

Source: Appendix Table

Table A6.2: NARC Expenditure								
Particulars	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Staff	85952 (41.6)	93599 (40.7)	103459 (34.9)	145286 (42.6)	148967 (36.6)	145118 (57.8)	149101 (57.0)	101156 * (57.2)
Operation	69883 (33.8)	85171 (37.0)	105089 (35.5)	110017 (32.2)	141319 (34.7)	72730 (29.0)	78621 (30.0)	55071 * (31.2)
Administration	29540 (14.3)	26551 (11.5)	40122 (13.5)	40272 (11.8)	45329 (11.1)	23030 (9.2)	33914 (13.0)	18441 * (10.4)
Capital	21213 (10.3)	24820 (10.8)	47766 (16.1)	45770 (13.4)	71406 (17.5)	10268 (4.1)	0 (0.0)	2078 * (1.2)
Total	206588	230141	296436	341345	407021	251146	261636	176746
Trend in %age		11.4	28.8	15.1	19.2	-38.3	4.2	-32.4

Source: Appendix Table
Note: The numbers in the parentheses are the percentage of total.
* signs indicate expected values

Table A6.3: Sources of funding for NARC								
Particulars	(1997/98)	(1998/99)	(1999/00)	(2000/01)	(2001/02)	(2002/03)	(2003/04)	2004/05)
NARC/HMG (40-3-700)	24482	31000	32206	14506	40000	43400	44540	48300
	(24.1)	(9.8)	(9.2)	(9.6)	(6.9)	(13.8)	(16.5)	(15.5)
ARP/HMG (40-3-710)	25884	32000	36000	-	-	222459	191817	210500
	(25.5)	(10.1)	(10.2)	(0.0)	(0.0)	(70.6)	(71.2)	(67.6)
KR2 Fishery (40-3-750)	17038	18879	20771	26311	85443	-	25278	30000
	(16.8)	(6.0)	(5.9)	(17.3)	(14.8)	(0.0)	(9.4)	(9.6)
Leasehold (40-4-760)	-	2750	3120	-	-	4380	-	-
		(0.9)	(0.9)			(1.4)		
Secondary Crop Project	26588	-	-	-	-	-	-	-
	(26.2)							
SDC	-	-	-	-	-	-	7595	22449
							(2.8)	(7.2)
AREP (40-4-700)	-	196077	224500	81396	382317	45000	-	-
		(62.1)	(63.9)	(53.6)	(66.2)	(14.3)		
HARP	7500	35000	35000	29553	70000	-	-	-
	(7.4)	(11.1)	(10.0)	(19.5)	(12.1)			
Total	101492	315706	351597	151766	577760	315239	269230	311249
Growth Trend		(211.1)	(11.4)	-(56.8)	(280.7)	-(45.4)	-(14.6)	(15.6)

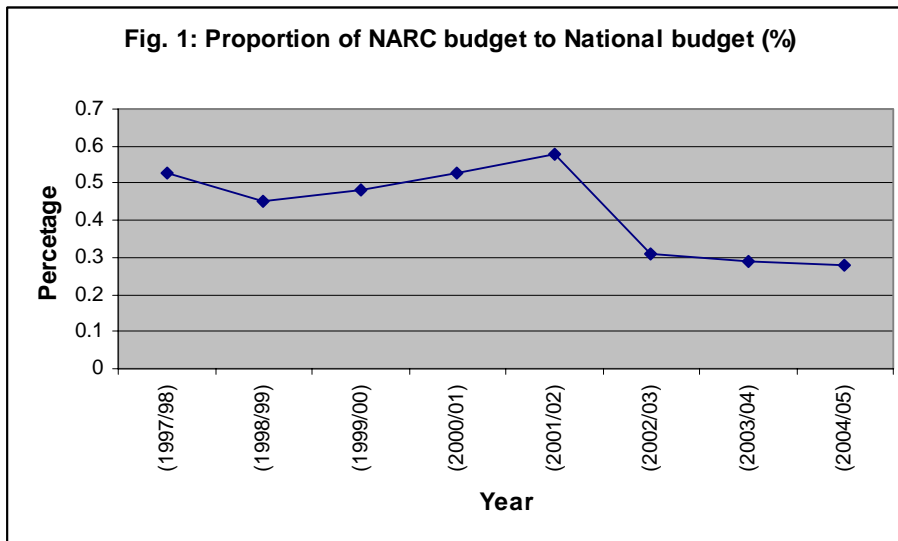
Source: Appendix Table
Note: The numbers in the parentheses are the percentage of total.

Table A6.4: NARC Project disciplines								
Particulars	(1997/98)	(1998/99)	(1999/00)	(2000/01)	(2001/02)	(2002/03)	(2003/04)	(2004/05)
Crops	27703 (38.8)	30335 (33.9)	45379 (38.9)	49243 (32.0)	54679 (29.1)	23548 (25.1)	36706 (37.0)	41162 (39.2)
Horticulture	7845 (11.0)	9602 (10.7)	11612 (10.0)	10529 (6.8)	23393 (12.4)	11848 (12.6)	11442 (11.5)	13202 (12.6)
Livestock	14609 (20.5)	19148 (21.4)	17326 (14.9)	24655 (16.0)	35797 (19.0)	19853 (21.1)	15169 (15.3)	15978 (15.2)
Fishery	9289 (13.0)	9309 (10.4)	8602 (7.4)	8977 (5.8)	12879 (6.8)	5573 (5.9)	11200 (11.3)	12000 (11.4)
Multi-sector	11942 (16.7)	21015 (23.5)	33643 (28.9)	60320 (39.2)	61314 (32.6)	33124 (35.3)	24774 (25.0)	22139 (21.1)
Others	-	-	-	-	-	-	-	608 (0.6)
Total	71388	89409	116562	153724	188062	93946	99291	105089
Growth Trend		25.2	30.4	31.9	22.3	-50.0	5.7	5.8

Source: Appendix Table
Note: The numbers in the parentheses are the percentage of the total.

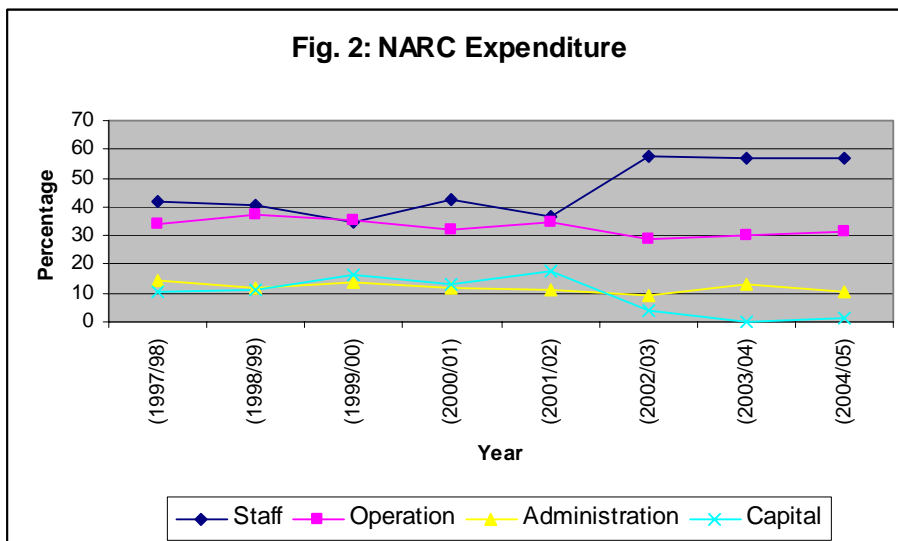
Table A6.5 : NARC Project categories								
Particulars	(1997/98)	(1998/99)	(1999/00)	(2000/01)	(2001/02)	(2002/03)	(2003/04)	(2004/05)
Core	41168 (57.7)	44887 (63.7)	47567 (63.3)	58659 (38.2)	70213 (37.3)	45741 (48.7)	44443 (44.8)	42708 (40.6)
Technology generation	15764 (22.1)	16470 (23.4)	18956 (25.2)	73014 (47.5)	35887 (19.1)	12398 (13.2)	14461 (14.6)	21268 (20.2)
Socio-economic	5903 (8.3)	7871 (11.2)	8620 (11.5)	15609 (10.2)	20804 (11.1)	11387 (12.1)	9473 (9.5)	9172 (8.7)
Environmental	-	-	-	-	542 (0.3)	1093 (1.2)	1137 (1.1)	1425 (1.4)
New frontier	-	-	-	-	1707 (0.9)	1352 (1.4)	1132 (1.1)	1299 (1.2)
Others	8553 (12.0)	1234 (1.8)	(0.0)	6442 (4.2)	58909 (31.3)	21975 (23.4)	28645 (28.8)	29217 (27.8)
Total	71388	70462	75143	153724	188062	93946	99291	105089
Growth Trend		-1.3	6.6	104.6	22.3	-50.0	5.7	5.8

Source: Appendix Table
Note: The numbers in the parentheses are the percentage of total.



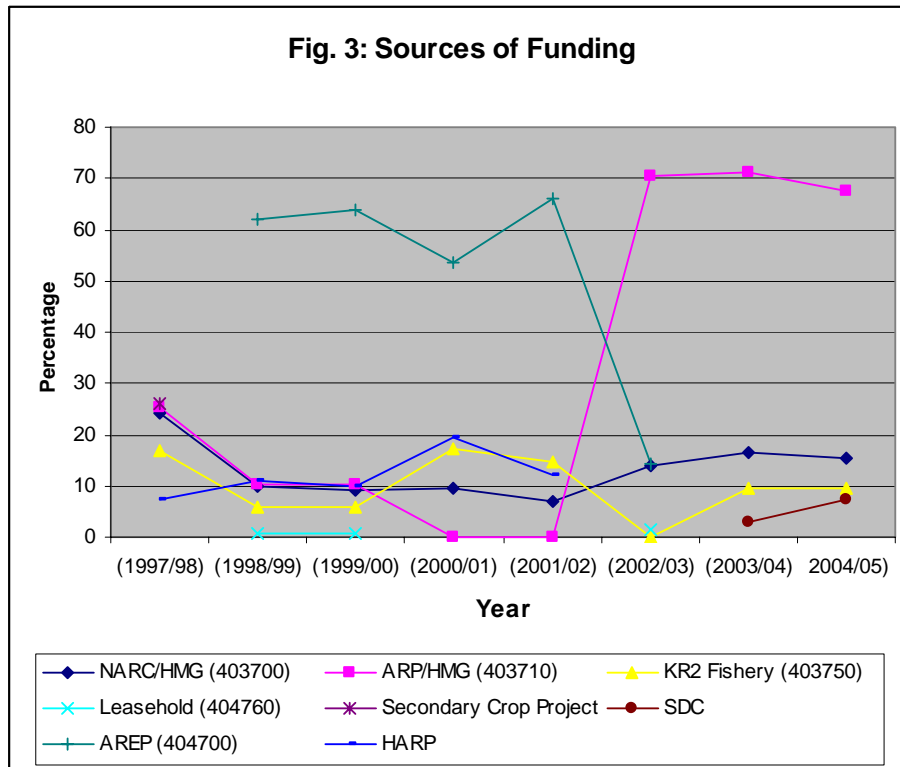
2.2 NARC Expenditure

Most of the NARC financial resource has been spent on staff salary followed by operational costs (Table A6.2). Although the administrative expenditure has been contained at the level of around 12% annually between 1997 and 2005, expenditure on capital items has been decreasing since 2002/03. Likewise, total expenditure was also reduced in the year 2002/03 by more than 38 percent and to the level of 32 percent during 2004/05. As in the past, NARC expenditure strategy has shown an erratic pattern in general, the expenditure in future should be concentrated more on the operation and capital creation for the technological progress for the benefit of the farmers.



2.3 Sources of funding in NARC

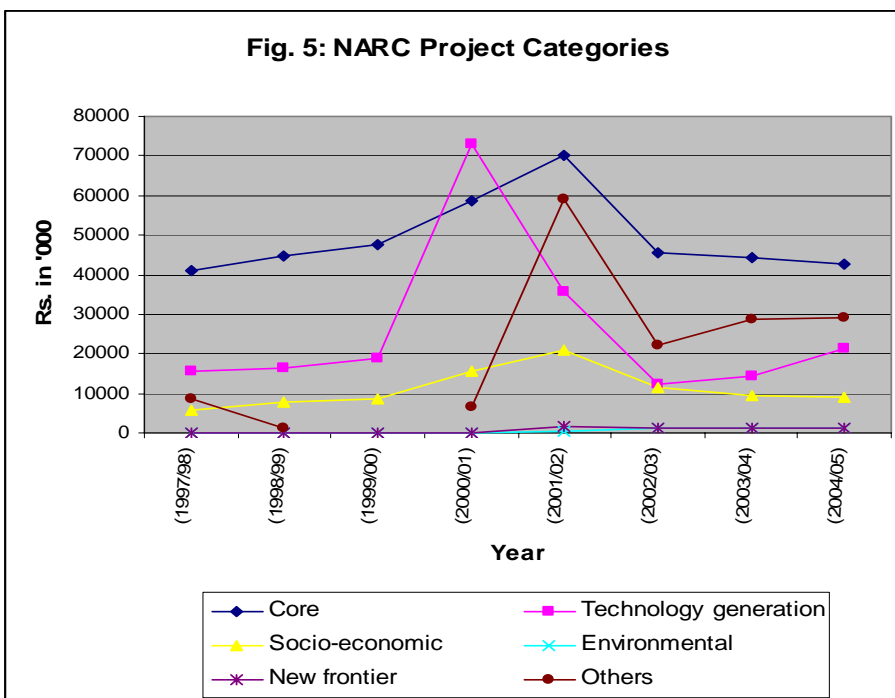
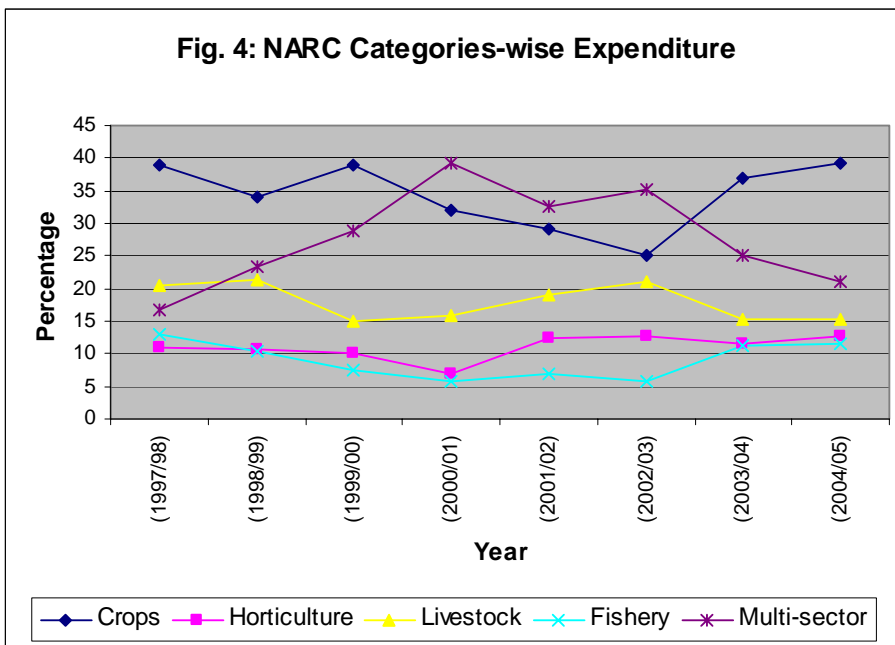
The funding trend is even more erratic than in that of the expenditure, with a high level of fluctuation. In the year 1998/99 the growth was more than double, while in the years 2000-04 the growth was negative.



It seems that addressing the issue of regular and consistent funding should be the basic norm of NARC funding in future. What is more important for future strategy is the regular and smooth funding through the HMG financial resource for NARC activities. Supplementary and more assured regular external support for specific needs to be explored as a part of future strategy.

2.4 Project disciplines

The highest portion of NARC's budget is spent on crop-related projects followed by multi-sector projects (Table A6.4). Another main discipline is livestock. One important consideration here could be the reconciliation of the NARC expenditure pattern in consistence with the overall agricultural strategy of Nepal specified in the Tenth Plan. However, the trend shows that even the crops and the multi-sector activities are showing highly fluctuating trends



2.5 Project categories

The largest single item of expenditure is the “core” category, followed by technology generation and socio-economic research. After year 2001/02, there two categories of expenditure, namely, “Environmental” and “New Frontier” have been added.

Much of the fluctuation is observed in the core and technology generation projects during the period 2000-03, as high cost projects seem to have been undertaken during these years. The future strategy should be towards a more consistently planned and prioritized list of research projects with expected meaningful outcome.

3. Conclusion

From the above analysis and indications, it seems logical to infer that NARC has to more seriously streamline its expenditure based on a consistent and prioritized internal financing, supplemented by a more regular and meaningful external support based on ground level research achievements for the boosting of Nepalese agriculture which still gives employment to around 80 percent of the labour force and contributes almost 40 percent of the country-l GDP.

Appendix to Annexe 6: NARC: Financial Expenditure and Funding Analysis 1997-2005 (approved amount NRP '000)

Particulars	(1997/98)	(1998/99)	(1999/00)	(2000/01)	(2001/02)	(2002/03)	(2003/04)	(2004/05)
National budget	62022294	69693337	77238226	91621335	99792219	96124796	102400000	111,689,900
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Proportion of NARC budget to National budget (%)	0.53	0.45	0.48	0.53	0.58	0.31	0.29	0.28
Proportion of NARC budget to the budget of MoAC (%)	14.40	13.43	13.04	14.48	14.71	12.29	12.15	11.56
NARC Expenditure -----								
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Operation	69883	85171	105089	110017	141319	72730	78621	55071*
Administration	29540	26551	40122	40272	45329	23030	33914	18441*
Capital	21213	24820	47766	45770	71406	10268	0	2078*
Sources of funding in NARC								
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Leasehold (40-4-760)	-	2750	3120	-	-	4380	-	-
Secondary Crop Project	26588	-	-	-	-	-	-	-
SDC	-	-	-	-	-	-	7595	22449
AREP (40-4-700)	-	196077	224500	81396	382317	45000	-	-
HARP	7500	35000	35000	29553	70000	-	-	-

NARC: Financial Expenditure and Funding Analysis 1997-2005 (continued)								
Project disciplines	(1997/98)	(1998/99)	(1999/00)	(2000/01)	(2001/02)	(2002/03)	(2003/04)	(2004/05)
Crops	27703	30335	45379	49243	54679	23548	36706	41162
Horticulture	7845	9602	11612	10529	23393	11848	11442	13202
Livestock	14609	19148	17326	24655	35797	19853	15169	15978
Fishery	9289	9309	8602	8977	12879	5573	11200	12000
Multisector	11942	21015	33643	60320	61314	33124	24774	22139
Others	-	-	-	-	-	-	-	608
Project categories								
Core	41168	44887	47567	58659	70213	45741	44443	42708
Technology generation	15764	16470	18956	73014	35887	12398	14461	21268
Socio-economic	5903	7871	8620	15609	20804	11387	9473	9172
Environmental	-	-	-	-	542	1093	1137	1425
New frontier	-	-	-	-	1707	1352	1132	1299
Others	8553	1234		6442	58909	21975	28645	29217
* Expenditure of first eight months Source: NARC Annual Reports, various issues								