Project Title: A framework for *ex ante* impact assessment of feed resource options to promote sustainable livelihoods of resource-poor smallholders

Lead Centre(s): International Livestock Research Institute (ILRI)

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M Peters, F Holmann (CIAT)
S Twomlow (ICRISAT)

The following are being contacted regarding participation:
B Gerard, R Jones (ICRISAT)
D K Friesen (CIMMYT)
S Franzel (ICRAF)
R Quiroz, K Fuglie (CIP)
V Manyong (IITA)

Appropriate NARS will be identified and involved in project activities once the case study sites have been selected

Total Cost of Project (SLP Funds, USD):
$40,000

Anticipated Start Date and Duration of Project:
June 2004 start, duration 6 months

Locations of Project (Countries):
Global

Background (Max. 300 words)
Global population is projected to rise from 6 billion to 9 billion by 2030. At the same time, shifts in dietary preferences are anticipated as incomes rise, so that the demand for livestock products is expected to rise enormously (1). In addition, the impacts of climate change on smallholder crop and livestock production may be substantial in developing countries (2). As a result of such drivers of change, smallholder production systems will inevitably have to intensify. The challenge is to ensure that the smallholder sector, which provides the majority of milk and meat in the tropics, is able to take advantage of the increased demand, while improving household food security through increased and more stable crop and livestock
production, and protecting the natural resource base and sustaining rural livelihoods. Feed resources are an important productivity constraint throughout the tropics, and there are clear opportunities for appropriate research to improve the livelihoods of poor crop-livestock farmers, including food-feed crops (3, 4, 5). To reap the benefits of the great amount of previous work that has been carried out on feed resources, however, more work is required on targeting appropriate options. In this project, an *ex ante* impact assessment framework will be developed, that can be routinely applied to assess the biophysical, socio-economic, cultural and environmental impacts of feed resource interventions for target beneficiary groups. The framework could subsequently form the basis of a monitoring and evaluation tool for feed resources research activities. The assessment framework will provide one mechanism for the SLP to integrate research input across commodities (e.g. livestock and cereals), across research themes (e.g. systems analysis, marketing, NRM, and technology delivery pathways), and across disciplines (e.g. social science and genetics). In this way, the framework should have an impact on targeting appropriate interventions in appropriate places, and could ultimately help to provide solid evidence of the importance of livestock-crop interactions in alleviating poverty.

**Project purpose** (Max. 200 words)

State project purpose simply and directly
State why the SLP is the appropriate funding mechanism
State what inter-center synergies are expected from SLP participation in the project

The project purpose is to enhance the food security and increase incomes of smallholders in developing countries, through the provision and use of a framework for identifying and targeting both new and existing feed resource options that are appropriate to particular smallholders’ conditions, objectives and attitudes and that have a beneficial impact on sustainable livelihoods.

This work is suitable for SLP funding because it will provide a generic framework for impact assessment of all feed resources work. It will contribute to the wider goals of the SLP by providing methods and outputs that can greatly assist in the targeting of innovations and packages of technology and policy for relatively homogeneous groups of smallholders with shared characteristics. The major output from the project will help to form the basis for a coherent and cohesive SLP-lead research and development plan on feed resources in the coming years.

The project will provide the SLP with the means to integrate the strengths of certain IARCS in germplasm, animal science, systems analysis, and social science, and should promote cross-centre linkages on key issues related to food-feed crops, fodder legumes, pastures, and other options.

**Will the Project Contribute to CGIAR Goals in:**

<table>
<thead>
<tr>
<th>Goal</th>
<th>Yes/No</th>
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<tbody>
<tr>
<td>Germplasm enhancement</td>
<td>Yes/No</td>
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<tr>
<td>Natural resources management</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Policy analysis</td>
<td>Yes/No</td>
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<tr>
<td>NARS institutional development</td>
<td>Yes/No</td>
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**Outputs** (Max. 300 words)

Project outputs will include the following:
Output 1. A report describing the implementation of a generic framework for assessing the impact of feed resources.
This will address three basic questions: which data are required for impact assessment? How do we collect such data? How can the data be integrated to assess different impacts of feed resources? The report will include the following:

- Checklists describing the key information required for carrying out feed resources impact assessment. These will ensure that different aspects determining impact of feed resources are considered. For example:
  a. Targetting: niches for certain feed resources, farming systems descriptions, poverty and population databases, maps, household and economic surplus models and others.
  b. Innovation systems: delivery mechanisms (institutions, etc.), release systems, adoption studies, extension information, farmers objectives, key traits, etc.
  c. Markets: prices, infrastructure, service providers.
  d. Biotechnology: new varieties, genetic enhancement opportunities, key traits.
  e. Natural resource management: role of feed resource within farming systems, management, performance characteristics, feed resource / livestock / environment interactions.

- A repository of methods that could be applied at different stages of, and for different purposes in, the impact assessment process. These will include a list of tools, participatory methods and how to apply them for gathering the information described in the checklists.

- A road map for implementing the framework describing how to integrate the data collected for an impact assessment of feed resources.

Output 2. Information for SLP, CG centres and donors to evaluate and fine-tune submitted concept notes dealing with feed resources to ensure adherence to institutional and/or funding objectives.
This output is intended to assist research managers in prioritizing resource mobilization strategies in the area of feed resources by identifying aspects required, but not always covered in a single project, for implementing the impact assessment framework proposed. This information will be generated iteratively, including the application of the framework to specific case studies at a project workshop.

Potential Impact of Outputs: (Max. 200 Words)

Poverty alleviation
Food security
Environmental protection or enhancement

The project is expected to have impact in two major ways. First, project outputs will provide the SLP and researchers with the means to assess proposed research activities related to feed resources in the tropics. This should enhance the probability that the research work proposed can indeed affect target beneficiaries, and help to alleviate poverty, increase food security, and protect the natural resource base. For example, ex ante assessment work may identify the lack of current understanding of the role of feed resources in a particular system as a major constraint. In this case, some study would be indicated of how these smallholders perceive
the roles of different feed resources, and which traits they prefer, and how these may differ by
different wealth categories in their own communities. This “bottom-up” information can then
be linked with the top-down approach associated with broad spatial data layers at the regional
level, to provide the research team with estimates of adoption and impact of particular
interventions, and the spatial location of target beneficiaries with the required characteristics
for successful uptake.

Second, project outputs will provide a mechanism for integrating research inputs across
research areas, disciplines and research partners. The institutionalisation of an *ex ante* impact
assessment framework, whether at the level of the SLP itself or of individual CG centres and
NARS, whereby candidate feed resource research is assessed on a similar basis, and clear
gaps in the knowledge base or the infrastructural or policy environment identified, could
result in considerable increases in efficiency in poverty-orientated research and development
activities.

**Research Activities in Relation to Outputs** (Max. 300 words)

1. A broad farming systems classification will be designed for targeting niches for feed
resources. This classification will be sent to external stakeholders actively involved in feed
resources research for fine-tuning and validation. This will ensure that stakeholders recognize
the systems they are working in within this framework, while at the same time developing a
generic classification system for broader purposes. (Output 1)

2. A wide range of experienced external stakeholders will be consulted on types of
information required for feed resources impact assessment. This will allow the collation of a
preliminary checklist for subsequent discussion at a workshop. (Output 1)

3. A preliminary impact assessment framework will be developed for discussion with
external stakeholders. (Output 1)

4. A workshop (Outputs 1, 2) will be carried out to discuss the findings of activities 1-3. The
objectives of the workshop will be:

   - To agree on a farming systems classification system for driving feed resources
     research. (Output 1)
   - To create definitive checklists of information needed for feed resources impact
     assessment. (Output 1)
   - To apply the impact assessment framework to a few (two or three) project proposals
     relating to feed resources research, in order to assess its usefulness so that it can be
     subsequently refined, and to help prioritise resource mobilization activities. (Outputs
     1, 2)

5. Documentation: project outputs will be documented in a report that will be subjected to
external review.

**Impact and Beneficiaries:** (Max. 150 words)

State, preferably in quantitative terms, what development impact might be achieved in the short or medium term and who are the
beneficiaries.
State what indicators will be used to demonstrate impact.
State what activities will be undertaken during the project’s life to prove impact either ex-ante or ex-post.
The direct beneficiaries of the project will include the following:

- Feed resource research teams, who will be able to better justify their proposed research, increase the potential relevance of their research outputs, generate baseline information against which project milestones and outputs can be assessed through time, and can be used at the end of the project as a basis for *ex post* impact assessment of the research.

- Research managers and development agencies, who will be able to use the framework to assist in setting priorities that meet institutional or government policy objectives related to sustainable rural development.

Smallholders will benefit indirectly from improved targeting of new and existing feed resource strategies that fit with their own preferences and conditions, ultimately enhancing their livelihoods. While the direct development impact of the project will be small, the framework developed could have substantial impact in re-orientating crop-livestock research activities and targeting them in a more appropriate fashion. The primary indicator for judging the success of the project will be the degree of institutionalisation of the framework that is achieved within participating institutions.

**Dissemination and Uptake Pathways** (Max. 150 words):

Indicate what channels will be employed to ensure technology uptake
Indicate what methods will be used to upscale the findings
Suggest what might be the dimensions of the eventual recommendation domain

The way in which the major output of the project, the impact assessment framework, can itself have impact, is for it to be utilised to assess potential impacts of SLP-related research on feed resources in various places. For each candidate research activity, clear and feasible pathways of uptake will need to be identified, together with identification of recommendation domains for different mixes of technology and target beneficiaries. This should help to ensure that any resultant project findings are scaled up to an appropriate degree. Estimating the size of such recommendation domains is then an output of the research proposed. The institutionalisation of the framework within CG centres will be helped through “training by doing”, where the framework is used and technical input made as required to assist research teams to carry out their own *ex ante* impact assessment.

**Risks and Assumptions Associated with Output Achievement** (Max. 200 words):

There are several assumptions associated with achieving the outputs:

- That consensus can be reached from across institutes, disciplines and research areas on what constitutes an appropriate impact assessment framework – i.e., is enough currently known about the determinants of farming systems, of adoption, and of smallholder decision making in the face of uncertainty and risk.

- That a major reason for the limited impact of feed resources research, particularly in Africa, over the last few decades, is at least partially to do with an incomplete or defective understanding of the true milieu within which smallholders operate.
Major risks are that there is only weak support at the institutional and research team levels for the notion that an impact assessment framework is needed; that the efforts required to do impact assessment are not worth the extra insights that result; and that there is an unwillingness to embrace the impact-assessment-driven research paradigm.

**Financial Summary (Funds Requested from SLP)**

An indicative budget for this work is shown below.

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<th>Requested from SLP</th>
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<tr>
<td><strong>Staff</strong></td>
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<tr>
<td>- Research Officer @$1,400 per month, 5 months</td>
<td>$7,000</td>
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<tr>
<td>- 1 month IRS time</td>
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<tr>
<td><strong>Consumables</strong></td>
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<tr>
<td>- Workshop and survey materials</td>
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<tr>
<td><strong>Workshop</strong></td>
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<td>- Framework development</td>
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<tr>
<td><strong>Publication</strong></td>
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<tr>
<td>- Report costs</td>
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<tr>
<td><strong>Overhead and contingencies</strong></td>
<td>$1,000</td>
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<tr>
<td><strong>Total</strong></td>
<td>$40,000</td>
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**Funding Strategy**

Indicate which major donor is being targeted by the seed money period and the amount of funds sought. Explain why the Concept Note has a good chance of success in being turned into a major project proposal. Indicate in a timeframe the plan and milestones that will be achieved in order to submit a concept note and/or a full proposal to the identified donor.

The output of the project in itself can be seen as a major component in a coherent funding strategy. Being able to demonstrate to donors that a cross-cutting impact assessment of the work proposed has been carried out, along with identification of the major constraints to project success and confirming that project outputs contribute towards development goals, would constitute a considerable advance on many previous, ad hoc approaches. As noted above, feed resources in general are a (if not the) major production system constraint in many parts of the tropics, and while considerable research effort has been expended in this area in the past, the returns to the research have often been disappointing. The framework proposed here could play a part in increasing returns to research, and the willingness of donors to support feed resources work could be positively affected by it. The livestock revolution offers an unusual opportunity for mixed crop-livestock smallholders in Africa to intensify and
become much more attached to local and regional markets. It also constitutes a threat, in that there are development pathways and scenarios that could result in smallholders being completely by-passed by the livestock revolution. It is imperative, therefore, that the opportunity be taken over the next 15 years and that some of the benefits of the livestock revolution be firmly grasped by smallholders. If this is to happen, and if the Millennium Goal of halving the number of people living on $1 per day is to be achieved by 2015, then considerable progress will have to be made in Africa, and that agricultural research will have to be a key component of any successful strategy to accomplish this. Within this strategy, feed resources research will have a critical role to play, and it has to be appropriately prioritised and targetted.

Specific Capabilities of Consortia Members and Key Staff (Max. 300 words)

This project builds on a considerable body of expertise and experience by project participants. *Ex ante* impact assessment has been a widespread activity for 10 years or more, for many CG centres. Coupled with this, recent advances in continental-scale spatial databases on natural resources, farming systems, and poverty, have meant that relatively sophisticated spatial targeting is now possible (see Hartkamp et al., 2000; Kruska et al., 2003; Thornton et al., 2002). There is a wealth of tools that can be applied for impact assessment (see Thornton et al., 2003, for examples), and ILRI, CIMMYT, ICRISAT, ICRAF, IITA, CIP and CIAT all have long experience in institutional impact assessment and priority setting.

The principal investigators bring experience in institutional impact assessment and priority setting, and bio-physical and socio-economic modelling at various scales. Other ILRI participants bring expertise in GIS and spatial databases, agricultural economics, participatory research methods, animal science, and forage science. CIAT, CIMMYT, ICRISAT, IITA, ICRAF and CIP expertise includes breeders of maize, wheat, sorghum and millet, tropical pastures, participatory research methods, GIS and spatial analysis, and impact assessment and priority setting.
References


