TECHNICAL ADVISORY
TAN 853 CIAT1

Enhancing Livelihoods of Poor Livestock Keepers through Increased Use of Fodder:
Process of upscaling fodder development: Viet Nam case
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ABSTRACT

Farmers in Ea Kar district, Daklak province have shown that it is possible for smallholders to transform their cattle production from a low-output grazing system (‘cattle keepers’) to a high-quality, efficient beef cattle production system (‘cattle producers’) based on farm-grown fodders and stall-feeding. This change enabled traders to access city meat markets with high demand for quality beef. The process and lessons learnt while assisting smallholders with this transition is described in a separate Technical Advisory Note (TAN). In this TAN we describe the process and lessons learnt during up-scaling of fodder and cattle development in Ea Kar between 2007 and 2010. The up-scaling was designed to (i) reach more farmers in Ea Kar, (ii) facilitate fodder and cattle fattening in other districts in Daklak Province, and (iii) link with an IFAD investment project in another province and introduce fodder production and cattle fattening to a district in their project area:

(i) Reaching more farmers in Ea Kar: By 2010, more than 3000 smallholder farms had adopted fodder production to improve feed supply for their cattle; 540 farms practiced stall-fed cattle fattening and supplied city markets with high-quality cattle; and approximately 800 farms practiced stall-fed cow-calf production and supplied Laisind and cross-bred calves for fattening by smallholders in Ea Kar.

(ii) Facilitating fodder and cattle fattening in other districts in Daklak Province: In 2009, smallholder cattle fattening was introduced to two neighbouring districts adjacent to EaKar. Within a year, 50 smallholder farms had adopted fodder production and 5 farmer groups had started to fatten cattle in pens.

(iii) Linking with an IFAD investment project: The IFAD-investment project ‘Improving Market Participation of the Poor’ (IMPP) in Ha Tinh Province was selected as a partner in up-scaling fodder and cattle fattening. By the end of the project, 485 smallholder farms had adopted fodder production in four communes in Ky Anh district, the site selected as a pilot district in the IMPP project area. In addition, IMPP had commenced to up-scale fodder development to a further two districts, Can Loc and Huong Son, in Ha Tinh.

The key to successful up-scaling was to (i) have a convincing example in Ea Kar that showed that it was possible for comparable smallholder farm families to produce high-quality cattle competitively, (ii) build local coalitions for development which facilitated the adoption and development process, (iii) strengthen the capacity of local stakeholders in facilitating the fodder and cattle development process, supporting farmers in technical issues, and developing market access, and (iv) support stakeholders at new sites by linking them with experienced counterparts in Ea Kar and as well as linking them with other project participants in an informal network of professionals.

Conditions for uptake

The project ‘Enhancing Livelihoods of Poor Livestock Keepers through Increased Use of Fodder (FAP)’ showed that smallholder cattle fattening, based on farm-grown fodders, was possible in a wide range of environments and conditions in both upland and lowland areas where farmers raised cattle. The more intensively the area was cropped, the more rapid was the adoption. Adoption was lower in extensive agricultural systems where farms tended to have access to larger grazing areas which were well suited to extensive cow-calf production. One prerequisite for adoption of fodder production was access to fields that were not flooded for long periods. In Viet Nam cattle fattening required approx. 600-800 m² of fodder to provide sufficient feed to fatten one adult animal. This corresponded to approx. 5% of farm size. Farmers without cattle and cash reserves could not easily participate in this project, so credit facilities were arranged for very poor households. A separate TAN describes an innovative approach of providing credit for cattle fattening through local traders.

Existing linkages with other IFAD initiatives

The research project ‘Enhancing livelihoods of poor livestock keepers through increased used of fodder’ (FAP), collaborated closely with the IFAD investment project ‘Improving Market Participation of the Poor’ (IMPP) in Ha Tinh province. IMPP project managers were keen to capitalize on experiences from Ea Kar and introduce fodder production and cattle fattening in their project areas. IMPP staff participated in project meetings, field days and training courses arranged by FAP. IMPP funded the scaling out of fodder technologies to two additional districts, Can Loc and Huong Son, in Ha Tinh where cattle fattening had been prioritised as an option for improving income and market participation of poor smallholders. In 2010, 90 smallholders from Can Loc and Huong Son planted fodder crops following field visits to Ky Anh and training courses provided by FAP partners.
The target group of the project were poor smallholder farm families living on small, mixed crop-livestock farms and producing a diverse range of agricultural products for home consumption and sale. Target communes were located mainly in the uplands (rainfed agriculture) but fodder and cattle fattening was also adopted by farmers in lowland communities (irrigated rice areas) in Ky Anh District where the project operated. Many households in both upland and lowland communities raised 1-3 cattle which they used for draught, calf production and as a capital reserve for times of financial need. In Ea Kar, often the poorest households belonged to ethnic minority groups and indigenous people, and these were a special focus of FAP. Women, men and children were all involved in feeding and managing cattle.

**Beneficiaries**

The target group of the project were poor smallholder farm families living on small, mixed crop-livestock farms and producing a diverse range of agricultural products for home consumption and sale. Target communes were located mainly in the uplands (rainfed agriculture) but fodder and cattle fattening was also adopted by farmers in lowland communities (irrigated rice areas) in Ky Anh District where the project operated. Many households in both upland and lowland communities raised 1-3 cattle which they used for draught, calf production and as a capital reserve for times of financial need. In Ea Kar, often the poorest households belonged to ethnic minority groups and indigenous people, and these were a special focus of FAP. Women, men and children were all involved in feeding and managing cattle.

**Project strategy**

The Ea Kar example showed that smallholders could change their cattle production system and produce high-quality beef cattle that met the strict quality requirements of city markets (TAN # 853-2).

The research team, consisting of staff from the International Center for Tropical Agriculture (CIAT), Tay Nguyen University (TNU) and the National Institute of Animal Science (NIAS), formed a partnership with the local government in Ea Kar, with the District Extension Office (DEO) as a key partner, to up-scale successful cases of improved cattle production to more farmers in Ea Kar, and facilitate up-scaling to neighbouring districts. The team also formed a partnership with the IFAD-investment project IMPP in Ha Tinh (1,000 km north of Ea Kar) and together with IMPP selected Ky Anh, a poor district with potential for cattle development, as a target district for up-scaling. In Ky Anh, the District Agriculture and Rural Development (DARD) Office was appointed as the main local counterpart. At both sites, project implementation teams were formed that facilitated and managed the up-scaling process at local level. Key activities of the FAP were:

1. Building coalitions of local stakeholders to facilitate the fodder and cattle development process
2. Arranging cross-visits by key stakeholders to successful Ea Kar examples in order to see and discuss smallholder fodder and cattle development, so providing them with a vision for their farms or districts.

**The problem with traditional cattle production:**

Traditionally, cattle are grazed on grass, herbs and shrubs growing along road sides, fields and waterways, and in nearby forests. In intensively cropped lowland areas, farmers often supplement grazing with some freshly cut native grasses and crop residues. Almost invariably, there are two main issues with this type of production system:

1) Feed supply is insufficient for good animal growth as animals are unable to find enough fodder on heavily grazed land, and
2) Cattle management is very labour intensive as grazing needs to be supervised in cropping areas and cut-and-carry harvesting of low-growing, native grasses is very time consuming.

This situation has resulted in thin animals that can only be sold on local markets for local consumption providing poor financial returns from cattle production for smallholder families.

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1. TAN # 853-2 ‘Smallholder cattle fattening in Viet Nam’
3. Forming farmer interest groups, to analyse opportunities for fodder and cattle development and agree on actions.
4. Providing programmed, hands-on training to DARD staff, extension workers and farmers as needed for different stages of fodder and cattle development.
5. Supplying the initial planting material and providing frequent follow up to support extension workers and farmer groups.
6. Building capacity of the local DARD staff to facilitate the up-scaling process including technical knowledge, participatory extension approaches, farmers’ group formation and facilitation, and marketing studies.

A close link between local implementation teams in Ky Anh and Ea Kar was fostered to facilitate cross-site learning. Formal opportunities for interactions between the implementation teams were provided at both annual review and planning workshops and joint training courses. IMPP staff members were involved in all workshops and training courses to ensure that IMPP was fully aware of all project activities. These meetings created opportunities for discussing options for including FAP outputs into the IMPP programme. In Daklak, extensive consultations with the district and provincial governments and other key stakeholders resulted in the selection of two new districts, neighbouring Ea Kar, for up-scaling by the local government.

**Outputs and impacts**

In Ea Kar, an additional 700 smallholder farms adopted fodder production during the FAP project period bringing the total number of farmers growing fodder to well over 3000 farms by the end of 2010. The fodder adoption rate of farmers with cattle had increased from 23% in 2007 to 31% in 2010. Notably, the mean area used to produce fodder crops had grown from 890 to 1310 m² per household during the same period, clearly showing the ongoing development of fodder production in Ea Kar. With an average farm size of 1.3 ha, households had committed approximately 10% of their farm area to fodder production, which allowed them to continue to use most of their agricultural land for crop production. The main fodder crops grown were the grasses *Panicum maximum* ‘Simuang’, *Pennisetum purpureum* and a *Pennisetum* hybrid ‘VA06’ with smaller areas of *Brachiaria* hybrid ‘Mulato 2’ and the legume *Stylosanthes guianensis* ‘CIAT184’.

In Daklak, the provincial government agreed to facilitate scaling out of fodder production and cattle fattening to two new districts, Krong Bac and Krong Nang. TNU and the Ea Kar DEO facilitated community consultations, cross visits and training of farmers, extension officers and other stakeholders. A total of 50 farmers in these new districts planted forages in 2010 and 5 farmers commenced cattle fattening, following the example of Ea Kar farmers.

In Ky Anh, the introduction and evaluation of forages expanded from 23 farms in two communes in 2008 to 90 farms in 4 communes in 2009 and 485 farms in 2010. In the first year, most farmers grew 100-150 m² of forages to test their suitability. In the second year, many farmers had expanded their forage areas to 500-700 m² with some growing areas of more than 1000 m². The main fodder species selected by farmers were the grasses *Panicum maximum* ‘Simuang’, *Paspalum atratum* ‘Terenos’, *Brachiaria* hybrid ‘Mulato 2’, *Pennisetum purpureum* ‘Napier’ and *Pennisetum* hybrid ‘VA06’, and the legumes *Leucaena leucocephala* ‘K636’ and *Stylosanthes guianensis* ‘CIAT184’. On-farm experiments and village learning activities were carried out to evaluate and show the benefit of planted forages for fattening stall-fed cattle. In an on-farm experiment, the use of planted forages increased weight gain of cattle from 437 g/day for cattle fed native grasses + local concentrate to 619 g/day for cattle fed planted grass + the same amount of local concentrate. Farmers gained an additional USD 42 per animal for the 3-months fattening period (increased net income per animal from USD 25 for cattle fed native grass to USD 67 for cattle fed planted grass. This result generated considerable interest among farmers and, in 2010, a further 5 farms started to practice cattle fattening, with many more watching with interest.

**Financial returns and labour inputs into cattle fattening:**

Farmers’ profit from cattle fattening ranged from USD 0.7 – 1.2 per animal per day (deducting all cash inputs including interest on capital, fertiliser, animal health and concentrates, but not considering the cost of land and labour). Farmers fattening 2 cattle in pens spent 2 hours each day cutting fodder, providing feed and water, cleaning the pen and looking after the animals during the fattening period; resulting in a return to labour of approximately USD 0.95 per hour.

For comparison, a case study of 20 households practising traditional cow-calf production in Ea Kar showed that the mean financial return was USD 0.30 per animal per day (4 cattle per household, no planted fodder), and the return to labour was USD 0.18 / hour.
Constraints faced during the implementation

Understanding what was involved in moving technologies across scales (i.e. from one organisational unit to another) as well as the constraints, strengths and styles of a new set of institutional and human relationships were challenging aspects of up-scaling.

Expanding technologies to more farmers within an organisational unit like a district is relatively easy as there are few new stakeholders involved and there is local experience and expertise. Moving to a new district or province meant that there was a different set of stakeholders, who needed to work together and learn about fodder, improved cattle production and marketing as well as acquiring the skills needed to successfully manage and facilitate fodder and livestock development. Managing the institutional and human relations among the key actors, and strengthening their capacity to facilitate and support the development process was critical to success.

Selecting new sites:

Questions to ask:

- Is cattle production important to farmers’ livelihoods?
- Is lack of feed a major constraint?
- Are farmers and local government willing to invest time and effort into improving cattle production?
- Is there a suitable local implementation institution and are suitable personnel available to facilitate the up-scaling process?

In 2010, IMPP funded the scaling out of fodder production and cattle fattening to two new communes in Can Loc and Huong Son districts. Cross visits to successful fodder production communes in Ky Anh were arranged for government staff, extension workers and farmers from the new sites. 90 households participated in training courses and planted small areas of a range of forages to evaluate the benefits of growing fodder crops on their farms.

The local implementation teams (extension workers in Ea Kar and DARD staff in Ky Anh) became very skilled facilitators and project managers. They learnt how to encourage stakeholder involvement, facilitate consultations and workshops, conduct training courses, work with farmers and farmer groups in a participatory manner to evaluate new technologies, form farmer groups and clubs, and scale out successful technologies to new communes and villages. Similarly, farmers became expert fodder and cattle producers, and learnt ways of effectively assessing new technologies through Village Learning Activities (VLA). Local traders formed connections with larger traders in city markets and became experts in judging cattle and meat quality.

Other benefits from the transformations in cattle production included reduced grazing pressure on communal land and forests, increased availability of manure on smallholder farms, financial flow-on effects such as new business opportunities for local traders, input providers such as artificial inseminators and animal health workers.
**Scale issues**

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<tr>
<th>Scale level</th>
<th>Description</th>
<th>Typical stakeholders</th>
<th>Nature of interventions</th>
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<tr>
<td><strong>Micro scale</strong></td>
<td>- Site level (one or several villages)</td>
<td>- Farmers</td>
<td>- Mainly technical, possibly local regulations</td>
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<td>- Develop compelling examples of new systems</td>
<td>- Researchers</td>
<td>- Develop a partnership with local stakeholders</td>
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<td>- 50-100 households experience significant benefits</td>
<td>- Extension staff</td>
<td>- Create an environment for innovation</td>
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<td><strong>Meso scale</strong></td>
<td>- District level (many villages)</td>
<td>- Farmers’ groups</td>
<td>- Institutional and organisational</td>
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<td>- Scale out to many more farmers using the original site for learning</td>
<td>- Community organisations</td>
<td>- New technical and policy issues</td>
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<td>- New stakeholders and different needs for capacity building</td>
<td>- NGOs</td>
<td>- Build a coalition for development among key stakeholders</td>
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<td><strong>Macro scale</strong></td>
<td>- Provincial, national and international level</td>
<td>- Extension staff</td>
<td>- Strengthen capacity of stakeholders</td>
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<td>- New stakeholders need to be convinced of benefits of new systems and find ways of up-scaling to larger scales</td>
<td>- Researchers</td>
<td>- Provinical and national policy</td>
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<td>- District and local government</td>
<td>- Incentive structure</td>
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<td>- Private enterprise</td>
<td>- Publicise new systems and support with training modules for capacity strengthening</td>
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<td>- Service providers</td>
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**Sustainability, Acceptability and Accessibility**

Up-scaling required new and effective partnerships, ownership and support for up-scaling among the local coalition of stakeholders, an enabling environment in which stakeholders could learn, a strengthening of the capacity of the local implementation team to introduce and extend new technologies to farmers and facilitate the up-scaling process, an understanding of the market chain, facilitation of market access, and maybe luck. The key to sustainability was embedded in these processes: effective partnerships, participatory processes, learning together and a gradual handing over of responsibilities and ownership for facilitating and managing the process of up-scaling to local stakeholders. Once ownership was clearly embedded locally, the role of the researchers changed to one of supporting rather than driving development. ‘Letting go’ of successful up-scaling is not easy but a necessary step in ensuring sustainability.

The high degree of farmer and local stakeholder involvement ensured local ownership and contributed to the speed of adoption, which was much faster than the original introduction of fodder production and cattle fattening in Ea Kar from 2000 – 2005. Being able to arrange cross visits to Ea Kar and see and discuss fodder and cattle production with Ea Kar farmers and other stakeholders provided a vision to farmers, extension workers and government officials that sped up the learning and introduction of the new technologies in their districts. Also, using researchers and extension workers, who had been involved in developing Ea Kar, as advisors and trainers to strengthen capacity of local stakeholder, was very effective.

Up-scaling required extensive consultations with policy makers, district and provincial officials, DARD Office and Agriculture Extension Centres, Women’s and Farmers’ Union, traders, other private sector businesses and different levels of Government to ensure that the activities were well supported.
For farmers who already had cattle there were no obvious limitations to adoption. Forage grasses could be propagated vegetatively from rooted stems and a local market for planting material developed during major expansion phases. New farmers only needed a small amount of planting material and could then expand the area from their own cuttings. Fattening cattle before sale could be done by anyone who already had cattle and this added considerable value to sale price of the animal. Farmers without cattle and cash reserves could not easily participate unless credit facilities were arranged for very poor households. In Ea Kar, the local government negotiated with local banks to provide loans for cattle fattening to eligible poor households, provided that they had attended training courses and joined a farmers’ club to ensure support from experienced farmers. This enabled many poor families to engage in cattle fattening. Credit for this activity was only needed for short periods as fattening took only 2-4 months and loans could be paid back quickly. Nevertheless, obtaining credit is always an arduous task and there were risks involved which needed to be managed. Share farming arrangements were also noticed in some villages and these enabled farmers without animals to get started. In Ky Anh, the IFAD IMPP project also arranged credit facilities to enable poor farmers to participate in the benefits that fodder production and cattle fattening could achieve. A separate TAN # 853 describes the innovative approach to providing credit through traders for cattle fattening used in this project.

**Gender dimension**

The vast majority of cattle in Viet Nam were raised by smallholder farm households usually consisting of a married couple and their children; occasionally households also included a grandmother and/or grandfather. All family members contributed to livelihood activities to the best of their abilities. Husband and wife usually worked full-time on the farm, and children (and older people) helped with supervising grazing of cattle in traditional cattle production systems. Without children (and older people), supervising the grazing of cattle was very difficult as it was so time consuming. With the introduction of fodder crops, farmers could feed and manage stall-fed cattle more quickly and the task of doing so was generally performed by an husband and wife team. On some days, children were still responsible for taking cattle for a 1-2 hour walk, but this was much less time than when they had to spend 4-8 hours a day supervising cattle as they grazed. The relatively low labour inputs required for cattle fattening enabled many elderly farmers to engage in cattle fattening. Several elderly farmers said that cattle fattening made it possible for them to continue to lead an independent life and remain on their farms; they previously thought that they would have to leave their farms when they could no longer manage the work load involved in farming.

**Dissemination pathways**

In rural Viet Nam, the district government provided strong leadership in managing rural development. The District Agriculture and Rural Development Office and the District Extension Office were responsible for agricultural development and extension. The private sector, such as traders, agricultural input and service providers, interacted closely with the local government agencies. No NGOs with activities in livestock development were operating in the target areas at the time of the project but NGO activity is increasing in Viet Nam. With this background, the project consulted with local governments to assign a key agency to manage and facilitate up-scaling in their area. They provided training to farmers, arranged cross visits and field days, encouraged farmer group formation, and encouraged farmer-to-farmer learning through Village Learning Activities and discussions. With time, local traders became strong advocates of fodder production and cattle fattening. In the future NGOs may be key stakeholders also.

**Further research needs**

There is a need for continued support to smallholder farmers so they can make their evolving cattle production system more efficient and competitive, and market their cattle effectively. There is also a need to systematically apply the principles derived from this experience of upscaling fodder and cattle fattening to a range of different contexts and so provide stronger evidence that they are sound and replicable.

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2 TAN # 853-3 ‘Credit through traders – enabling the poorest to engage in cattle fattening’
USEFUL INFORMATION

Year of publication  2011

Useful links
http://fodder-adoption-project.wikispaces.com/
http://fodderadoption.wordpress.com/

References / Further information


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Acronyms
CIAT  International Center for Tropical Agriculture
DARD  District Agriculture and Rural Development
DEO  District Extension Office
FAP  Fodder Adoption Project – short for TAG 85’Enhancing Livelihoods of Poor Livestock Keepers through Increased Use of Fodder’
IFAD  International Fund for Agricultural Development
IMPP  Improving Market Participation of the Poor
ILRI  International Livestock Research Institute
NGO  Non-Government Organisation
NIAS  National Institute of Animal Science
TAN  Technical Advisory Note
TNU  Tay Nguyen University
VLA  Village Learning Activities
Project Brief: Enhancing livelihoods of poor livestock keepers through increasing use of fodder

Background
Livestock are an important pathway out of poverty for the rural poor. Worldwide, 50% of the world’s poor own livestock and depend on them for their livelihoods. Livestock are living assets contributing to food security and are an important source of protein and minerals for nutritional security.

There is increasing demand for livestock products worldwide in the form of meat, milk and milk products such as cheese and butter. This presents poor livestock producers with significant opportunities to increase benefits from their livestock and raise income through livestock markets. Access to fodder and water are often identified as major constraints to livestock productivity. This inability to feed livestock adequately remains one of the most widespread global constraints in the livestock sector. Removing it would assist smallholder livestock producers to improve their livelihoods by taking advantage of market opportunities and building assets.

Past efforts to enhance smallholder livestock production have shown little evidence of widespread adoption of new technological innovations such as new fodder options or new ways of feeding livestock. This has been attributed to a range of factors including poor approaches to introducing technologies, inappropriate technologies and services relative to the needs of the poor, low sustainability of the changes introduced, inadequate local livestock-support organizations and weak linkages to markets. Recent experiences in Nigeria and India focusing on fodder issues have highlighted the importance of understanding and developing partnerships and processes and working in what is known as an “innovation systems framework” to achieve sustainable improvements in poverty reduction. In effect this involves focusing on putting knowledge to achieve desired social/economic outcomes. Such knowledge is held by different “actors” within the system; looking at how these actors interact, their working practices and the policy environment in which they operate can help to remove bottlenecks to development. Recent experiences in Southeast Asia with developing forage technologies with active participation of poor farmers and local extension services have shown that this approach results in high adoption rates at project sites and surrounding areas.

Furthermore, studies by International Agricultural Research Centres (IARCs) and their partners show that when fodder options are linked to markets for meat and milk and when they have direct effects on income generation, fodder options to support livestock production are competitive with other farm enterprises in terms of returns to land and labour. These successful experiences in fodder uptake and significant accumulation of knowledge on preferences for fodder plants, seed systems, fodder management and integration of fodder into feeding systems provide the technical platform for this project.

Project Goals
The current project seeks to engage with a wide range of stakeholders to strengthen the capacity of poor livestock keepers to:

- select and adopt fodder options
- access market opportunities to enable them to improve their livelihoods.

The project seeks to achieve these goals in ways that will ensure the sustainability of their farming systems. The programme is framed around four overall outputs and associated activities. The project seeks to establish:

- Mechanisms for strengthening and/or establishing consortia of players in the livestock/fodder arena to allow small-scale innovations to spread across systems.
- Options for getting research off the shelf and into practice including innovative communication strategies and strategies for making changes at farm level to sustainably improve fodder supply.
• Enhanced capacity of project partners to experiment with and use fodder technologies through effective communication, improved access to technical information and training and a better understanding of the role of diverse players and their interactions in successful fodder development.

• Generic lessons with wide applicability on innovation processes and systems, communication strategies and partnerships that provide a suitable environment for fodder innovations to spread across systems.

Geographical focus
The project is implemented in Ethiopia, Syria and Vietnam:

• Ethiopia. The project has activities in four pilot learning sites. We are working with the Improving Productivity and Market Success of Ethiopian Farmers (IPMS) project (a Canadian-funded Ethiopian Ministry of Agriculture and Rural Development project, implemented under ILRI's leadership in collaboration with national organizations and other CGIAR centres) in Atsbi, Alamata, Mieso and Ada’a.

• Syria: The project is being implemented at El-Bab, Salameh and Tel-Amri in Aleppo, Hama and Homs provinces respectively. It builds upon previous forage introduction by ICARDA and the Syrian Ministry of Agriculture and Agrarian Reform in El-Bab, and ICARDA and Aga Khan Development Foundation in Salameh.

• Vietnam. The project is working at two learning sites. These are located in Ea Kar district, Daklak and in Ky Anh district, Ha Tinh. In Daklak, the project builds on previous introduction of forages by CIAT and Tay Nguyen University. In Ha Tinh, the project works within the project area of IFAD Loan Project ‘Programme for improving market participation of the poor (IMPP)’ using the lessons on fodder innovations generated at the Daklak learning site.

Project partners in the implementation of the programme
The International Livestock Research Institute (ILRI) is the implementing agent on behalf of the System-wide Livestock Programme. SLP provide strategic guidance and provide links with a sister project on Fodder Innovations funded by the UK Department for International Development. The programme is funded by the International Fund for Agricultural Development (IFAD). ILRI coordinates the project in the three countries, and leads activities on the ground in Ethiopia in collaboration with the IPMS project which has an ongoing programme of fodder development research. In Syria activities are led by the International Centre for Agricultural Research in the Dry Areas (ICARDA) with co-operation from the Syrian Ministry of Agriculture and Agrarian Reform and the Aga Khan Foundation. In Vietnam activities are led by the International Centre for Tropical Agriculture (CIAT) with co-operation from the Vietnam National Institute of Animal Science, Tay Nguyen University, district and provincial Departments of Rural Development at the pilot learning sites and the IFAD IMPP project.

In view of the informality of the TAN series, this manuscript may not entirely conform with the requirements of formal IFAD publications. The views and interpretations contained therein are those of the authors and should not be attributed to IFAD.