

Understanding Small Stock as Livelihood Assets

Final Technical Report

NRIL Contract Number: **ZC0167**
DFID Contract Number: **R7823**

Project Title: **Understanding small stock as livelihood assets: indicators for facilitating technology development and dissemination**

Research Programme: **Livestock Production Programme**
Production System: **Forest Agriculture Interface**

Project Leader/Institution: **Dr Andrew Dorward, Imperial College**
Counterpart Institutions: **CICA, UAEM, Mexico; CEVEP, Bolivia.**

Executive Summary

The project aimed to improve understanding of the roles of livestock keeping in the livelihoods of poor people and to develop indicators and methodologies for generic and participatory appraisal, monitoring and evaluation of pro-poor livestock keeping research and development interventions. This was achieved through work with livestock keeping communities in Mexico and Bolivia, first collecting and analysing livelihood and livestock keeping information and then developing and testing appraisal and monitoring methods. These methods were built on a conceptual framework linking asset functions to dynamic 'hanging in', 'stepping up' and 'stepping out' livelihood strategies under different agro-ecological and socio-economic conditions. The methods and conceptual framework, already being adopted by development practitioners in different parts of the world, should lead to improved design and field implementation of pro-poor livestock keeping interventions, and also contribute to improved policy analysis and design which can reduce poor people's vulnerability to change and increase their ability to exploit new livelihood opportunities.

Background

Effective small stock research and development activities and funding are constrained by a lack of indicators and field methods for *ex ante*, on going and *ex post* assessment of the roles of small stock in livelihoods of the poor. One reason for this is that little is known about the contributions of small stock to the livelihoods of the poor, and outside interventions have often focussed disproportionately on increasing livestock productivity without sufficient consideration of other contributions of livestock keeping to the livelihoods of the poor (for example as assets for savings and protection against vulnerability). It is difficult, however, to appraise, monitor and evaluate research and development projects' potential and actual impacts on the livelihoods of poor livestock keepers without better understanding of small stock's varied contributions to poor people's livelihoods, and without indicators which can help identify and keep track of the importance of these contributions and of changes in them over time. Rural people themselves when working with the project have also expressed interest in understanding better the contributions that livestock make to their livelihoods, to enable them to make better informed decisions about the scale and management of these and other competing or complementary activities.

Interest in this project arose out of research and community development work with campesino groups in southern Mexico (LPP Project “Optimising the integration of livestock into small-scale low external input crop systems”, NRIL Contract Number: ZC0075, DFID Contract Number: R6982) and from views expressed by Latin American research and NGO workers at two workshops in 1999, in Peru with GIAREC (a consortium of three NGOs and 3 NARS) and in Mexico involving CIAT (Colombia) and researchers and NGOs in SE Mexico. It also responds to concerns raised by LPP management about difficulties in *ex ante* and *ex post* identification of poverty reducing impacts of livestock research. Further demand for the work has been articulated in discussions with LPP management and with NGO community development workers and extension and research workers in Bolivia, Ecuador and Peru, with researchers in East, Southern and West African countries, and with researchers working on and in South and South East Asia.

Project Purpose

The project contributes to the following LPP output:

Appropriate strategies for improving the productivity of scavenger and other small livestock kept by resource-poor farmers in the forest-agriculture, high-potential and peri-urban production systems developed taking account of

- the actual and potential role of small/scavenging/non-traditional livestock in the livelihoods of the poor
- production and other characteristics which resource-poor farmers seek from such stock
- the financial/labour/land inputs which farmers are prepared to invest into such ‘systems’.
- environmental implications of any proposed management intervention

The specific objectives of the project were to

- Develop appropriate **indicators** and **participatory methods** for assessing the contribution of small stock to livelihoods of the poor in specific situations for use in *ex ante* appraisal of small stock technology contributions to livelihoods and hence prioritisation (and design) of potential interventions to support small stock keeping in the livelihoods of the poor, and in participatory monitoring and evaluation.
- **Identify key research and intervention areas** for improving the contribution of small stock keeping to the livelihoods of the poor.
- Provide an example of the **application of the sustainable livelihoods approach** to develop understanding of relationships between poor people’s assets, vulnerability, activities, livelihood outcomes and transforming structures and processes, with use of this understanding to develop participatory indicators for design, monitoring and evaluation of projects working with the poor to improve their livelihoods and help them climb out of poverty.

The project aimed to extend understanding of the contribution of small stock keeping (and other asset based livelihood activities) to the livelihoods of poor people in specific communities in Bolivia and Mexico and then build on this to develop and test indicators and participatory field methods for use by researchers, extensionists, NGOs and small stock keepers to assess and work together to improve the contribution of small stock to livelihoods of the poor in specific situations. Research outputs should have the potential to benefit poor small stock keepers world-wide.

Research Activities

Research activities were divided into three overlapping phases: (1) investigation of livelihood contributions of small stock keeping in the livelihoods of poor livestock keepers in selected communities in Mexico and Bolivia; (2) development of indicators and participatory field methods for appraisal, monitoring and evaluation of these contributions; and (3) dissemination. These are described in more detail below.

1. Livelihood contributions of small stock keeping in the livelihoods of poor livestock keepers in selected communities in Mexico and Bolivia were formally pursued by constructing *spreadsheet models* to analyse the contribution of small stock keeping (and other activities) to the livelihoods of different household types. This involved (in conjunction with the CALL project - R7820) participatory data gathering and analysis with two communities in central Mexico and two in Bolivia. Data were also available from another community in Quintana Roo in SE Mexico.
2. The spreadsheet modelling and participatory data collection work yielded important insights into the 'fit' between different livestock keeping activities and different households' livelihood strategies in different types of market and agro-ecological environment. These insights were pulled together in a workshop for project participants and used to design initial topics for investigation in the development of possible livestock contribution indicators. Field testing of these, with the same Bolivian and two different Mexican communities, allowed the project team to develop a specific 'toolkit' for participatory indicator development. This 'toolkit' was then field tested again with technical staff in Bolivia and with selected communities in Bolivia (again in conjunction with the CALL project).
3. Dissemination has thus far involved presentation of and training in use of the 'toolkit' in workshops with technical staff involved with the 'Pro Poor Livestock Uptake Pathways' project in Bolivia and with a partner NGO in Mexico (where three postgraduates, four undergraduates and 10 NGO field staff were trained), with technical staff in Nepal, and with a range of African and European based professionals working with ILRI. A guide to the use of the indicators and methods has been prepared and is being distributed widely through the internet. Translation of this into Spanish is nearing completion. Conference papers have already been presented, citing critical insights from the project into livelihood development pathways, and two or more scientific papers are planned and currently being drafted.

Outputs

The project built on findings from a previous LPP Project ("Optimising the integration of livestock into small-scale low external input crop systems") which, *inter alia*, developed a conceptual framework relating asset ownership and functions to wellbeing (Dorward et al, 2001). This was further developed and extended during the project, through the work with local communities in Mexico and Bolivia and the spreadsheet modelling. This involved elaboration of the asset and activity functions of livestock and livestock keeping (and of other activities), a deeper understanding of the attributes of assets in fulfilling those functions, and, critically, the integration of these into a dynamic understanding of people's livelihood strategies, characterised as 'hanging in', 'stepping up' and 'stepping out'¹. This characterisation of 'livelihood strategies' and their relationship with people's assets and

¹ See the 'Guide to indicators and methods for assessing the contribution of livestock keeping to the livelihoods of the poor' (attached) for a description of asset and activity functions and attributes and of 'hanging in', 'stepping up' and 'stepping out' strategies.

socio-economic and agro-ecological environment has been extremely useful both in grass roots work with rural people and in wider policy analysis looking at rural development, poverty reduction, and sectoral linkages². These conceptual advances provided a vital underpinning to the development of the participatory indicators and methods. These represent the most tangible outputs of the project and are described in detail in the major physical product of the project, a 'Guide to indicators and methods for assessing the contribution of livestock keeping to the livelihoods of the poor' (attached).

The project has therefore delivered planned outputs, but not to the original time schedule as it became clear early on in the project that to gain maximum benefit from intellectual, data, and financial management synergies between this project and the CALL project (R7820) it would be necessary to delay this project's work to fit the longer implementation schedule of the CALL project.

Contribution of Outputs

The outputs from this project will contribute towards DFID's developmental goals (and indeed have already started to do this) in two ways.

First the participatory indicators and methods developed in the project and detailed in the Guide will assist poor livestock keepers and those working with them to more effectively plan, appraise, monitor, implement and evaluate livestock keeping development activities aimed at improving their livelihoods. This should result in reduced vulnerability and increased incomes and welfare for poor livestock keepers. The guide distinguishes between and provides methods for two levels of appraisal of livestock keeping development activities: specific and generic appraisals. The latter involves outsiders' consideration of the general impact of activities on people across a wide range of communities whereas the former is concerned with participatory methods involving beneficiaries and potential beneficiaries in specific communities. Examples of where these specific methods are already being applied include ongoing work by project partners in Bolivia and Mexico, and research and development work in Benin, Ethiopia, Kenya and Nepal (involving FAO, the Asian Development Bank, ILRI, and NGO and government agencies in each of these countries). Uptake of these methods will spread further through the experience of these projects and through dissemination of the Guide.³

Second, the project's development of a simple but powerful conceptualisation of dynamic livelihood strategies should make a contribution to better policy analysis and development planning and implementation both within and beyond livestock related activities. This is evidenced by the adoption and adaptation of the 'hanging in', 'stepping up' and 'stepping out' conceptualisation in a variety of contexts (as detailed in footnote 2 above, see also under 'dissemination' below).

² Although not formally published at the time, it has been usefully applied in work on livestock keeping in Nepal, on non-timber forest products in Southern Africa, and on rural and peri-urban livelihoods in Vietnam, and in thinking about agricultural extension. It is currently being applied in DFID's conceptualisation of 'making market systems work better for the poor' as a development approach.

³ The LTIP project in Nepal has used and adapted the indicator matrices for impact assessment and importance of livestock analysis in 12 villages in three regions of Nepal. A multi-disciplinary team from different organisations (including the National Agricultural Research Council, the Department of Livestock Services (DLS), and the Ministry of Agriculture and Livestock directorate) has been trained in the methods and the Asian Development Bank has funded community livestock development project with DLS & Min of Ag staff to be trained in methods that include indicators.

Promotion of further uptake of these outputs will continue through wider dissemination of the guide, through dissemination of results from project using the methods, through incorporation of some of the findings in post-graduate teaching materials in use in Imperial College at Wye and in its world-wide distance learning programme, through presentations at conferences, and through papers for scientific and policy publications.

Dissemination

The development in the project of a clearer conceptualisation of the role of livestock keeping in the livelihoods of the poor is relevant to much wider consideration of poor people's livelihood strategies and the role of markets within them. These insights have been reported in a number of conference and other papers. There has been substantial dissemination and interest in the work in Mexico. Training sessions and presentations have also been conducted outside Bolivia, Mexico and the UK, in Benin, Nepal, and Germany with professionals already using these methods, as noted earlier.

Reference Type	Citation Details
Seminar paper	DORWARD, A. R., ANDERSON S. and CLARK S. Asset functions and livelihood strategies: a framework for pro-poor analysis, policy and practice. Proceedings 74th Seminar European Association of Agricultural Economists, Livelihoods and Rural Poverty, Imperial College at Wye, September 2001 [seminar, 70 international participants] (seminar)
Seminar paper	DORWARD, A., Pro-Poor Livelihoods: Addressing the Market/ Private Sector Gap. Paper presented at the Sustainable Livelihoods Seminar on 'Private Sector and Enterprise Development', Crown Plaza Hotel, Manchester, 19th November 2001. [seminar, 40 participants] (seminar)
Seminar paper	DORWARD A., POOLE N., MORRISON J, KYDD J. and UREY I. (2002) <i>Critical Linkages: Livelihoods, Markets and Institutions</i> . Paper presented at the Seminar on 'Supporting Institutions, Evolving Livelihoods', Bradford Centre for International Development, University of Bradford 29 th -30 th May 2002 also posted on Livelihoods Connect & IC@Wye websites http://www.imperial.ac.uk/agriculturalsciences/research/sections/aebm/the_mes/agrarian/publications.htm [seminar, international, C30 participants] (seminar)
Journal article	SÁNCHEZ, V.E., NAVA, B.Y., MUÑOZ, G.O., GARCIA, D.R.X., CUEVAS, E.R., ANDERSON, S. y DORWARD, A. (2002) Importancia de la crianza ovina a través de sus funciones y propósitos en dos comunidades pobres del Estado de México. <i>Acontecer Ovino-Caprino</i> , IV (5): 58-62.
Journal article	DORWARD A., POOLE N., MORRISON J, KYDD J. and UREY I. (2003) Markets, institutions and technology: missing links in livelihoods analysis. <i>Development Policy Review</i> 21 (3) 319-332
Workshop	DORWARD, A., ANDERSON, S., SANCHEZ VERA, E., NAVA, Y., RUSHTON, J. and PAZ, R. (2003) Understanding small stock as livelihood assets: indicators for technology development', Sucre, Bolivia, 3 rd July [half day training/ testing with 8 livestock development specialists] Spanish (workshop)
Seminar	DORWARD, A., ANDERSON, S., SANCHEZ VERA, E., NAVA, Y., RUSHTON, J. and PAZ, R. (2003) Livelihood Indicators in Pro-Poor R&D, NRInternational, East Malling, 16 th July . http://www.imperial.ac.uk/agriculturalsciences/research/sections/aebm/pro

	<p>jects/small_live_downloads/nrintppt.pdf</p> <p>[afternoon workshop, approx 15 NRInt staff & interested professionals] (seminar)</p>
Seminar	<p>DORWARD A. and POOLE N. <i>Markets, Risks, Assets and Opportunities: the links between the functioning of markets and the livelihoods of the poor</i>. Paper presented at workshop on Making Markets work Better for the Poor, ADB, Hanoi, November 2003 http://www.markets4poor.org/english/dorwardfinal20pager-pdf.pdf</p> <p>[seminar, international, C30 participants] (seminar)</p>
Electronic media (E conference)	<p>DORWARD, A. (2004) Diversity. Contribution to AgREN e-mail discussion on the Implications of Rural Livelihood Diversity for Pro-poor Agricultural Initiatives, 26 March 2004</p>
Conference	<p>Sánchez V. E., Nava, B. Y., Guiza V., K., Muñoz G. O. García, D. R. X. y Cuevas E. R. (2001): <i>El papel de la crianza del ganado menor para la reducción de la pobreza en unidades campesinas en dos comunidades del estado de México</i>. 7º Coloquio de Investigación 2001. Universidad Autónoma del Estado de México.</p>
Conference	<p>Sánchez V. E., Nava, B. Y., Guiza V., K., Muñoz G. O. García, D. R. X. y Cuevas E. R.: (2002) Entendimiento del ganado menor como bienes en las formas de vida: indicadores para facilitar el desarrollo y diseminación de tecnología. "8º Coloquio de Investigación 2002. Universidad Autónoma del Estado de México.</p>
Conference	<p>Sánchez VE, Muñoz GO; Sandoval RFR, Anderson S, y Dorward A. (2003) Métodos y Propuestas Tecnológicas para Mejorar la Ovinocultura de dos Comunidades Marginadas del Estado De México. <i>Memorias (Resumen) XXXIX Reunión Nacional de Investigación Pecuaria, Universidad Nacional Autónoma de México, 27 al 31 Octubre 2003, México, DF</i></p>
Seminar	<p>Sánchez VE^a, Nava BY; Anderson S, Dorward A (2004) <i>Dinámicas sociales de la producción local ganadera que limitan la integración de las comunidades campesinas al proceso de globalización</i>. Seminario Nacional Sobre el Medio Rural Problemas y Perspectivas. Universidad Autónoma de Chapingo. Septiembre 2004</p>
Seminar	<p>Sánchez VE^a, Nava BY; Anderson S, Dorward A (2004) <i>Acciones concertadas (investigación participativa) para el desarrollo pecuario en comunidades campesinas</i>. Seminario Nacional Sobre el Medio Rural Problemas y Perspectivas. Universidad Autónoma de Chapingo. Septiembre 2004.</p>
Conference	<p>Sánchez V.E, Nava B.Y; Anderson S y Dorward A. (2004) <i>Metodo de Identificación de Indicadores para Evaluación Ex Ante y Monitoreo de Intervenciones Tecnológicas en Sistemas de Producción Campesinos Pobres</i>. XXXX Reunión Nacional de Investigación Pecuaria 2004, Mérida, Yucatán, México.</p>
Conference	<p>Sánchez VE, Martínez GCG, Nava BY, Cuevas ER., Anderson, S. y Dorward, A. (2004) <i>Análisis Comparativo del Aporte Nutricional y Económico del Rastrojo Molido y Rastrojo en Greña en Rumiantes en Sistemas Campesinos de Producción</i>. XXXX Reunión Nacional de Investigación Pecuaria 2004, Mérida, Yucatán, México.</p>
Conference	<p>Cuevas ER; Sánchez VE; Nava BY; García DRX; Anderson S. y Dorward A. (2004) <i>Importancia de los Animales en dos Comunidades Pobres del Estado de México</i>. XXXX Reunión Nacional de Investigación Pecuaria 2004, Mérida, Yucatán, México.</p>
Undergraduate thesis	<p>Cuevas, E. R. (2004) <i>Importancia de los Animales en dos comunidades pobres del Estado de México</i>. Tesis de Licenciatura. Facultad de medicina Veterinaria y Zootecnia, Universidad Autónoma del Estado de</p>

	México. México.
Postgraduate thesis	Muñoz, G.O. (2004) <i>Propuestas tecnológicas participativas para la ovino-cultura de dos comunidades marginadas del Estado de México</i> . Tesis de Maestría, Universidad Autónoma del Estado de México. México
Journal article	Sánchez V. E., Nava, B. Y., Muñoz G. O. García, D. R. X. , Cuevas E. R., Anderson, S. y Dorward, A. (2002) Importancia de la crianza ovina a través de sus funciones y propósitos en dos comunidades pobres del Estado de México. <i>Acontecer Ovino-Caprino</i> , Vol. IV, No. 15. Ediciones Pecuarías 58-62
Book chapter	Sánchez, V.E. (2003) Tecnología e Investigación para el Desarrollo Rural: una revisión de conceptos para la investigación agropecuaria. <i>Investigación para el Desarrollo Rural:Nuevas experiencias a XV años del CICA</i> . Rivera H.G. (Coord.), CICA-UAEM, 103-133.
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Submitted paper	Sánchez, V. E; Nava, B. Y; Anderson y Dorward, A. (2005) Transferencia de tecnología pecuaria para las familias campesinas en el marco del desarrollo rural. <i>La construcción de los desarrollos rurales ¿hacia la sustentabilidad?</i> . Centro de Investigación en Ciencias Agropecuarias y la Facultad de Ciencias Políticas y Administración Pública de la UAEM.
Submitted paper	Oscar Muñoz Guzmán; Ernesto Sánchez Vera; Fernando R. Sandoval Rosales; Yolanda Nava Bernal; Xochitl García D; Rita Cuevas E; Simón Anderson; Andrew Dorward (2005) <i>Importancia de la Crianza Ovina a través de sus funciones y propósitos y su relación socioeconómica en dos comunidades marginadas del Estado de México (Xicani Mpio. de San Bartolo Morelos y San Marcos de la Loma Mpio. de Villa Victoria)</i> . Ciencia Ergo Sum.
Technical Guide	DORWARD A., ANDERSON S.,NAVA, Y., PATTISON, J., PAZ, R., RUSHTON, J. and SANCHEZ VERA, E. (2004) A Guide to indicators and methods for assessing the contribution of livestock keeping to the livelihoods of the poor. Department of Agricultural Sciences, Imperial College London. (also translation for Spanish version nearing completion)