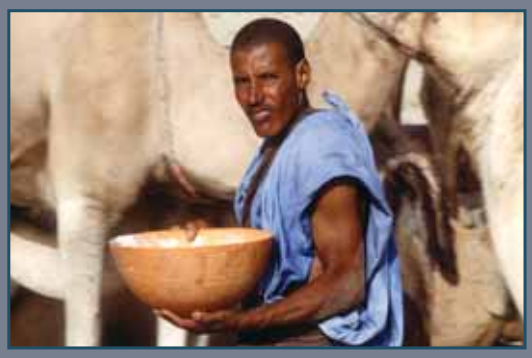

Livestock Production and the Millennium Development Goals

The role of livestock for pro-poor growth

LIVESTOCKNET
SWISS NETWORK FOR LIVESTOCK IN DEVELOPMENT

May 2006

Editorial:

LIVESTOCKNET is a Swiss network of university, private sector, NGO and government stakeholders working in livestock and development. Its objective is to improve Swiss actions and to strengthen the Swiss position in livestock and development issues. One of the activities of LivestockNet is to provide support and act as a sounding board for decision makers by offering advice, along with references and links to other networks and institutions

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LIVESTOCKNET
c./o. InfoAgrar
Swiss College of Agriculture
Länggasse 85
3052 Zollikofen
Switzerland
Tel.: +41 31 910 21 91
lsn@infoagrar.ch
www.livestocknet.ch

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COVER PAGE:

- Women shearing sheep, Puno, Peru, 1994
  FAO / 17462 / A. Odoul

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- Farmer with buffaloes grazing by a river at the edge of a rice field, Prey Veng area, Cambodia, 1996
  FAO / 19606 / G. Bizzarri

- Woman farmer feeding her hens, Kyone, Myanmar, 1996
  FAO / 19758 / G. Bizzarri

INSIDE PAGES

p5 – Kitchen in Andhra Pradesh, India (Peter Hofs)
p6 – Ploughing oxen, Southern Sudan (VSF-Suisse)
p7 – A tribal school in Andhra Pradesh, India (Peter Hofs)
p8 – Bottom left: Small Ruminant Development Programme Andhra Pradesh, India (Annet Witteveen)
Bottom right: Small Ruminant Development Programme Andhra Pradesh, India (Annet Witteveen)
p9 – Milking of goat, Southern Sudan (VSF-Suisse)
p10 – Mother and child, at Tribal village, Andhra Pradesh, India (Peter Hofs)
p11 – LWF/DWS Mozambique (Philip Wijmans)
p12 – Small Ruminant Development Programme Andhra Pradesh, India (Annet Witteveen)
p13 – Market Mbozi, Tanzania (Annet Witteveen)

Contents

Introduction 4

Context 4

Livestock production and the MDGs 5

MDG 1. Eradicate extreme poverty and hunger 5
MDG 2. Achieve universal primary education 7
MDG 3. Promote gender equality and empower women 8
MDG 4. Reduce child mortality 9
MDG 5. Improve maternal health 10
MDG 6. Combat HIV/AIDS, malaria, and other diseases 11
MDG 7. Ensure environmental sustainability 12
MDG 8. Develop a global partnership for development 13

Conclusion 14

LivestockNet, a resource group 15

Table 1.
Overview of interrelations between livestock production in developing countries and the MDGs 16

Table 2.
Overview of key working domains of LivestockNet members in the context of the MDGs 17

Annex 1.
The MDGs and their respective targets 18

Endnotes / References 19

Sponsors of this publication 20

Introduction

LivestockNet[1] is a formal group of Swiss-based professionals who meet bi-annually to share information about their work and discuss research and development issues that fall under the theme of livestock production and poverty alleviation.

The group recently carried out an in-house exercise where they analysed the linkages between livestock production[2] in developing countries and the Millennium Development Goals (MDGs, see box)[3]. This paper is based on discussions held by members participating in this exercise. The discussion enabled LivestockNet members to match their work and competence against the framework set by the MDGs. This paper explores the potential and limitations of livestock production in contributing to pro-poor growth, vis a vis the eight MDGs. The aim of the paper is to highlight how the inclusion of livestock in livelihood programmes can help to alleviate poverty and promote sustainable development.

Millennium Development Goals

Goal 1	Eradicate extreme poverty and hunger
Goal 2	Achieve universal primary education
Goal 3	Promote gender equality and empower women
Goal 4	Reduce child mortality
Goal 5	Improve maternal health
Goal 6	Combat HIV/AIDS, malaria, and other diseases
Goal 7	Ensure environmental sustainability
Goal 8	Develop a global partnership for development

Context

Fighting poverty has become the overriding priority in the new millennium. By adopting the Millennium Declaration[4], the Member States of the United Nations committed themselves to address poverty. This resulted in the formulation of the MDGs in 2000. Since then, these goals have become important objectives for governments, as well as bi- and multilateral development cooperation. UN Member States are assessing their achievements against the targets set (Annex 1), and development organisations and aid agencies are reflecting on their contributions.

One of the criticisms often voiced with regard to the MDGs is that they put too much emphasis on what should be achieved rather than indicating how to actually achieve the eight goals. However, this is understandable; the MDGs should be seen as the least common denominators. Defining the role for livestock therefore remains a challenge for policy makers.

The role of agriculture in general and of livestock production in particular in the fight against poverty is a recurring debate. Starting in the 1990s policy makers, including donor communities, lost interest in the agriculture sector. The low prices on the world market for agricultural commodities did not encourage investments or funding of projects in the sector. After a decade of neglect, interest in the agricultural sector has reappeared on the agenda, as there is an increasing understanding that economic growth will only contribute to reducing poverty, if the unequal distribution of income is not neglected. It is in this context that policy makers recognise agricultural development and natural resource management as a central tool to reach the MDGs[5].

The livestock sector is not static. It is subject to changes brought about by increase in the human population, urbanisation, economic growth and market transformations. The renewed interest in livestock production is also related to the ongoing 'supermarket revolution'[6]. All over the world, also in developing countries, supermarkets are emerging and are transforming the food supply chain. The growing demand for livestock products, due to the increased purchasing power of large numbers of people in urban and semi-urban centres, offers a potential for the livestock sector. However, quality standards set by the supermarkets threaten the participation of poor livestock keepers, and there is a genuine fear that they will not be able to benefit from these developments[7]. Conducive policies (global trade reforms to make livestock production more profitable for developing countries), together with focused interventions (investment in pro-poor infrastructure and technologies)[7], are required to ensure that the development of the livestock sector becomes relevant for the poor and contributes to poverty reduction.

Livestock production and the MDGs

What is the role of livestock with regard to the MDGs? What is the potential and what are possible negative impacts of livestock and livestock production for achieving the MDGs? The interactions are context specific. For example, livestock may be the only opportunity for poor families to escape from the poverty trap in rural areas in India, whereas it may pose a threat to poor communities depending on forests in regions of South America due to the destruction of forests through the development of pasture lands. The analysis of both positive and negative interrelations between livestock production and the MDGs is a central element in defining processes to achieve the MDGs. This paper provides insight into the possibilities and limitations of how the livestock sector can contribute to poverty alleviation. In addition, the paper collates experiences that support the formulation of development strategies.

The main positive and negative interactions between livestock production and the MDGs are summarised in Table 1 and briefly described below. The text includes boxes that illustrate the points highlighted.

MDG 1. Eradicate extreme poverty and hunger

Livestock are an integral part of nearly all rural livelihood farming systems[8]. Large numbers of poor and marginalised farmers depend on livestock as their primary or secondary source of income. Livestock are an important resource and act as a 'bank' for poorer households. For many landless people, livestock are the only productive asset they have next to their labour. Livestock provide a livelihood for 50% of the 700 million poorest households in the world. Compared to land, the ownership of livestock is generally more equitable.

In mixed farming or crop/livestock systems in semi-arid regions, keeping animals is directly linked to crop production, as the animals provide draught power and soil fertility depends on manure. In the arid areas of the world, livestock are often the only source of livelihood[9], and people's diet is predominantly based on animal products. In these areas, ruminants contribute to livelihood through their capacity to convert low quality roughage into high quality products such as milk and meat.

Poverty is not only about lack of income, it is also about vulnerability. Livestock provide particularly poor households with the potential to 'bank' their savings, which enhances their 'capacities' to cope with shocks and reduces their economic vulnerability. In times of crises (e.g., in sub Saharan Africa when people are forced to move due to drought or internal conflicts), livestock play an important role because they are a 'mobile' food asset.

Livestock contribute to human nutrition – particularly in areas where malnutrition is common – through their products (i.e. meat, milk, milk products and eggs), which in turn provide high quality nutrients and micronutrients (e.g., protein, vitamins and trace elements). However, this statement should be interpreted with caution: animal products are often too expensive for the

poor, who need access to staple food to eradicate hunger. In certain production systems and depending on the market situation, competition can arise between human and animal nutrition.

In order to strengthen the role of livestock in eradicating poverty and hunger it is important to increase production. Increased production can be achieved via sound animal husbandry practices (i.e., management and nutrition), effective animal health programmes, selected use of modern breed improvement technologies, and the provision of 'need-based' service and input systems within an enabling institutional framework.

The development of intensive and semi-intensive production systems, along with the ongoing increase in demand for livestock products, will certainly contribute to the creation of income generating activities. These activities also benefit the very poor, even if they are not livestock owners (e.g., production of feed and fodder or processing and marketing of products and by-products).

... doubling consumption ...

The Smallholder Livestock Development Project of IFAD/ DANIDA in Bangladesh achieved remarkable results in coverage (1.25 million women) and in alleviating poverty in the target group. The consumption of eggs and milk doubled in their households during the project period.

Kristensen et al.[10]

MDG 2. Achieve universal primary education

Inability of families to meet the costs of schooling is often the main reason why children cannot attend school or drop out at an early stage. Selling of animals and their products provides one of the few possibilities for poor households to generate cash income to meet yearly school fees. Children from households with access to high quality animal food products will have better health and thus, benefit even more from the education they receive. However, there are also drawbacks: children must often take care of the animals, which affects their attendance in school. Moreover, the migratory lifestyle of pastoralists often prevents children from even enrolling into primary education.

... livestock focus in the curriculum ...

'Alternative Basic Education for Karamoja, Uganda, addresses the primary education needs of children from the Karamojong herders' communities. The curriculum is relevant for Karamoja and includes a focus on livestock and crop education.

IRINnews[11]

... choice ...

"Schools are not in line with the movement routes. Therefore we face a hard choice: putting children in school or moving with the animals."

Scott-Villiers, P.[12]

... mobile schools ...

"Mobile schools use collapsible classrooms that can be assembled or disassembled within thirty minutes and carried conveniently by pack bulls. A whole classroom and its furniture may be hauled by only four pack animals. Motor caravans are replacing pack animals in moving the classrooms. A typical mobile unit consists of three classrooms, each with spaces for fifteen to twenty children."

Iro, I.[13]

MDG 3. Promote gender equality and empower women

In many places women are the caretakers of livestock – especially where animals are kept at the homestead. This provides women with access to the benefits of livestock keeping, such as the opportunity to sell products like milk and eggs. The income helps these women to meet their immediate needs and to enhance their status in the household and at the community level. Quite often women are the owners of the animals (especially small stock), which gives them control over this resource and contributes to their empowerment. However, women share not only the benefits but also the workload: fetching water, herding, milking, milk processing and carrying the fodder.

... joint ownership by women and men ...

Zambian cultural tradition restricts women's rights to own and inherit property. Heifer Zambia recognized this constraint and transformed its practices for ownership of the animals it provides. Heifer establishes joint ownership by the husband and the wife in a family. The contract signed also allows a woman to inherit the animal if her spouse dies.

Kindervatter, S.[14]

... empowerment of women was another achievement ...

Thanks to the development of their dairy business, an increasing number of women were elected and took up leadership positions in community based groups.

Livestock and dairy projects turn out to be excellent vehicles for tackling gender issues, as livestock keeping is an integral part of most farm households, with special tasks for both husband and wife.

Bachmann, F.[15]

MDG 4. Reduce child mortality

The contribution of livestock to the reduction of child mortality is well demonstrated through the enhanced capacity of poor households to meet health-related expenses thanks to income earned from their livestock. Unexpected health care costs are frequently met by tapping the above mentioned 'banking' function of animals, whereas the purchase of medicine is often made possible through the sale of animal products.

The consumption of milk, milk products, meat and eggs can help reduce child mortality. Livestock products not only provide proteins, minerals and energy, but are also a key source of vitamin A for pastoral communities who have limited access to vegetables and fruit. Doubling the current milk consumption among pastoralists would satisfy the vitamin A requirements of many communities.[16] Additionally, the positive role of small ruminants and poultry in meeting the food requirements of children should not be underestimated. Women, often the owners of these animals, use the revenues directly for the family.

... goats benefit children ...

"The majority of rural Bangladeshis do not have access to arable land. Given the scarcity of arable land, cattle rearing provides an alternative form of subsistence for poor families. Family members can raise and rear one or two cows or goats. The benefits are numerous; the children receive adequate nourishment and the parents can sell the milk and milk products."

Siddique, R.K.[17]

MDG 5. Improve maternal health

For maternal health, milk, milk products and occasionally meat contribute massively to the nutritional status of women. Aside from nursing their children, they often do an enormous amount of physical labour in carrying out the daily household chores (e.g., fetching water, collecting firewood or dung, carrying goods to and from the market). Breast feeding can be shortened when goat or cow milk is available, leading to a decrease in health risks for the mother. Income generation from livestock owned by women can also help to improve maternal health.

... need to act ...

"Except for iron fortification, there have been few attempts to assess the effectiveness of food based strategies to improve iron status. Increasing intake of vitamin C, through local foods, is probably an inadequate strategy to improve iron status where iron deficiency is prevalent. Targeting animal products to those with the highest iron requirements, and supporting the production of poultry, small livestock and fish, would increase the intake of absorbable iron and other micronutrients."

Lindsay, H. et al.[18]

MDG 6. Combat HIV/AIDS, malaria, and other diseases

HIV/AIDS can severely undermine livestock production, thereby reducing the benefits that families receive from livestock keeping, be it crop-livestock, pastoral or agro-pastoral production, and thus exacerbates food insecurity.[19,20] The high workload associated with animal keeping can negatively influence the health of HIV/AIDS affected persons. However, at the same time, keeping livestock is very useful as a mitigation strategy for HIV/AIDS affected families.[21] In many cases, people from urban areas with a disease return to their families in rural areas, where animals are an important source of livelihood.

Support for animal health care interventions can also be used to address human health issues. In some places extensionists who visit livestock keepers, use their visit to increase awareness of human diseases. Combining animal and human health services by using the same infrastructure can be a cost effective strategy for developing countries to reach out to those groups that are often deprived of proper human health care.

There is generally a positive interaction between livestock and human health, as high value nutrients from animal products contribute to the health conditions of vulnerable groups. On the other hand, animals may also pose a threat to humans through the spread of zoonotic diseases (e.g., tuberculosis and bird flu), which are a risk for public health.[24]

... animal products contribute considerably ...

"Villagers also keep goats and occasionally sheep and for some years now small-scale pig rearing has entered the community. Poultry is kept for home consumption to enrich the diet with protein, but it is also sold. Although livestock keeping is not a predominant occupation, the sale of animals and animal products contributes considerably to the generation of extra income for regular and extraordinary expenses, including education and medical care."

Haslwimmer, M.[22]

... food security and HIV/AIDS mitigation ...

"In the context of HIV/AIDS, nutrition represents a primary health care component. A nutritionally balanced diet seems to improve the control of HIV infection and to mitigate the health impact of AIDS (e.g., opportunistic infections, propensity to malnutrition). Therefore, nutrition oriented policies should be a priority, yet they are often absent in agricultural development policies and programmes."

Gari, Josep A.[23]

MDG 7. Ensure environmental sustainability

Animals are often blamed for environmental degradation (e.g., erosion due to overgrazing, decline in vegetation diversity due to selective grazing and water pollution due to animal waste disposal). A more nuanced assessment is required, as over-exploitation of natural resources is often caused by a combination of factors, that are directly or indirectly linked to population pressure or to a collapse of traditional management systems.

The rapidly growing demand for livestock produce is met by even faster growing and industrialised animal production systems. If not well managed, these systems can damage the environment and pose public health risks.

Livestock contribute to environmental sustainability through enhancement of soil fertility, control of vegetative growth, and distribution and fortification of seeds. Land degradation often can be reversed only if due emphasis is placed on maintaining and restoring soil quality – a process in which organic matter, and thus manure, are indispensable. Animal traction or draught power provides an indigenous and sustainable source of energy in many developing countries, without depleting fossil energy resources. Intensified animal production will lead to lower stocking rates, and thus decrease the pressure on the environment.

Thus, a well managed integrated crop-livestock system has the potential to create a win-win situation for both farmers and the environment (e.g., draft power and manure for crops) without damaging the environment.

... transformation of the livestock sector ...

"The pressures on the environment are the result of a process of change in which the rising demand for livestock commodities is creating a new role not only for livestock but also for the environment. In essence, the conflict between livestock and the environment is a conflict between different human needs and expectations."

De Haan, C. et al.[25]

... regulating grazing ...

"Agro-pastoralists in over 800 villages in the Shinyanga region of Tanzania have revived a traditional Ngitili system of creating enclosures to regulate livestock grazing, that not only serves fodder production needs, but is helping to restore woodland and providing ecological services in dry land watersheds that increase crop and dairy production."

McNeely, J.A. et al.[26]

MDG 8. Develop a global partnership for development

Multi-institutional partnerships around livestock based value chains exist worldwide, as trade in livestock products is affected by globalisation. The WTO negotiations with respect to livestock commodities influence these global partnerships and determine the scope for development and pro-poor growth. Specific actions and policies are required to ensure trade incentives, which make it possible for the poor (producers and consumers) to benefit effectively from global livestock trade. Given the current trade and economic imbalances, livestock development may play a crucial role in diversifying the income base of farmers who are affected by low prices for primary commodities on the world market.

... international collaboration ...

"The SLP adds value to global crop-livestock research by adopting a holistic approach that ensures synergy among mutually reinforcing interventions. We identify critical gaps in food-feed and related natural resources research and bring together the complementary expertise needed to address them. We tackle complex issues relating to the productivity and sustainability of agriculture in areas with large numbers of smallholder beneficiaries. At the same time, we identify ways of improving the policy environment for these innovations to be accessible to their end users. Lastly, we seek to maximise the impact of the work we support by developing effective partnerships and building local capacity to scale up the results of our research."

Consultative Group on International Agricultural Research[27]

Conclusion

The dimensions of poverty are alarming, and the eradication of extreme poverty and hunger has become the key challenge of our generation. The majority of the poor live in rural areas. Most of them are small farmers struggling to meet their basic needs or landless people who sell their labour. Domestic animals are important for the livelihood of millions of rural poor as they contribute to food security, creation of assets and the reduction of vulnerability. Livestock perform multiple roles and functions in a large range of socio-economic settings.

There is evidence of a direct link between improvement of livestock production and poverty reduction. Worldwide there are multiple examples that illustrate the potential of livestock in their contribution to achieving the MDGs. Despite this potential, livestock productivity is often rather low. Livestock owners are constrained by poor access to markets and services, weak institutions, and lack of appropriate technologies. Pro-poor livestock development initiatives will have to be based on a sustainable livelihood approach addressing the production system as a whole.

The rapidly increasing demand for livestock products is a driving force behind the development of the livestock sector. However, it often leads to concentration of animal production in limited areas and bears environmental and social risks. Development policies and strategies that enhance livestock productivity will only lead to sustainable solutions if they address equity questions and environmental concerns as well. LivestockNet plans to promote developments that reinforce the role of livestock in poverty reduction.

LIVESTOCKNET, A RESOURCE GROUP

LivestockNet is based on a common interest and inter-related fields of expertise in the area of livestock and development. This brings the members together, who represent different organisations (university, private sector, NGO and governments), even though the nature of their work (e.g., scientific research, commerce, grassroots implementation, policy development, service delivery) is rather diverse. Moreover, this diversity enables LivestockNet to pool complementary knowledge and competences in the livestock sector.

One of the objectives of LivestockNet is to provide support and to act as a sounding board for decision makers by offering advice along with references and links to other networks and institutions. The insights in the role of livestock in fighting poverty are directly linked to the members' respective working domains and fields of specialisation. An inventory of the key working domains among the LivestockNet members has enabled the network to map its competences against the MDGs (Table 2).

The working domains of the LivestockNet members touch all focus areas of the MDGs, though the following issues in particular:

- **Livestock and poverty questions** (MDG 1) through the implementation of development projects, humanitarian aid and basic research,
- **Livestock and human health aspects** (MDGs 4, 5 and 6) through work related to zoonotic diseases and health services,
- **Livestock and environmental sustainability** (MDG 7) through the focus on natural resource management.

As a result of this exercise, the network members expressed their commitment to join forces and develop short briefs on selected topics for wider dissemination. This will enable LivestockNet to provide more in-depth information on these topics, and, thus, to reach out to a larger group of development practitioners and policy makers who are concerned with the question of livestock as a tool for poverty alleviation.

Members of LivestockNet

- Banjara Hills Consults (BHC)
- Bravo Consulting
- Centre for Development and Environment (CDE)
- Institute of Animal Sciences (IAS), ETH Zurich
- InfoAgrar
- Intercooperation (IC)
- Research Institute of Organic Agriculture FiBL
- Safe Food Solutions, Inc. (SAFOSO)
- Swiss College of Agriculture (SHL)
- Swiss Federal Veterinary Office (SFVO)
- Swiss Tropical Institute (STI)
- Swissgenetics
- Vétérinaires Sans Frontières Suisse (VSF-Suisse)
- Vetsuisse-Fakulty, University of Zurich
- Swiss Centre for International Agriculture (ZIL)
- World Herders Council (WHC)

For more information on the members, please visit our web page: ***www.livestocknet.ch***

Table 1.
Overview of interrelations between livestock production in developing countries and the MDGs

Millennium goal	Positive interaction	Negative interaction
1. Eradicate extreme poverty and hunger	• 500 of about 800 million poor rely on livestock for their livelihood • Livestock forms an important productive asset for poor and marginalised families • The livestock sector generates employment and thus income • Livestock products contribute high quality nutrients to the diet of millions in developing countries • Under certain agro-ecological conditions, natural resources can only become available as human nutrition through livestock (milk, meat)	• When animals are fed with grain and other feeds there is a competition with human nutrition. The conversion of plant protein and energy into livestock products is inefficient • The potential effect of livestock production on land degradation and pollution can, through a known impact chain, effect environmental functions which in turn, affect livelihood security
2. Achieve universal primary education	• Income from livestock production is used to meet the costs for schooling • Livestock are used for asset building, which enables families to save and pay annual school fees	• Children are involved in herding or collecting water for the animals, this prevents them from regularly attending school
3. Promote gender equality and empower women	• Animals, especially small stock, are often owned by women; they have access to and control over livestock products and income • In situations where land titles cannot be under the name of women, animals represent the only possible asset	• Rearing animals, including water collection, can be a burden for women
4. Reduce child mortality	• Income from livestock production contributes to meeting the costs of medicine • Livestock are used as savings that enables poor families to meet unexpected medical costs • Livestock production increases the access to quality animal protein (milk, meat and eggs) which reduces malnutrition and contributes to increased resistance • Veterinary services can be a gateway for public health	• Livestock can be a threat to public health through zoonotic diseases
5. Improve maternal health		• Taking care of livestock is a heavy workload that affects the physical condition of (pregnant) women
6. Combat HIV/AIDS, malaria, and other diseases		
7. Ensure environmental sustainability	• Livestock contributes to soil fertility and sustainable natural resource management by providing manure • Animal traction provides energy without depleting fossil energy resources	• There is a risk of increased soil erosion due to livestock production when stocking rates are not in line with the carrying capacity of the area • Intensive livestock production poses a threat to the environment due to accumulation of nutrients and contamination of water resources
8. Develop a global partnership for development	• The importance of livestock products can be enhanced beyond their important subsistence role as trade commodities • Global partnerships can be enhanced through trade reforms, via more open and transparent markets that make livestock production more profitable for developing countries • International research partnerships • An increasing threat of animal diseases at a global level offers opportunities and funds to integrate animal production into a more effective health control system. This will open avenues to overcome current health and hygiene related trade distortions	• International trade systems for livestock products are protecting markets in the North

Table 2.
Overview of key working domains of LivestockNet members in the context of the MDGs

Millennium goal	Key working domains
1. Eradicate extreme poverty and hunger	CDE: Conducting research (partnerships) with a focus on poverty, NRM and poverty related syndromes of global change IC: Implementing development programmes with a pro-poor orientation InfoAgrar: Making existing information available INW/ETH: Research on the impact of natural and human-induced disasters on livestock production; focus on developing mitigation strategies SHL: Linking state of the art technology with development goals; focus on livestock based livelihoods and appropriate technology VSF-Suisse: Implementing projects targeting vulnerable populations; humanitarian aid ZIL: Basic research and institutional collaboration aiming at improved human well-being
2. Achieve universal primary education	BHC: Supporting primary education in tribal areas in India; livelihood support through, e.g., small ruminants
3. Promote gender equality and empower women	BHC: Supporting projects on livestock as a tool to empower tribal women IC: Addressing gender inequality as transversal theme in IC programmes CDE: Gender disparities identified as one of the key syndromes of global change
4. Reduce child mortality 5. Improve maternal health	STI: Applied research for control of zoonoses; development of strategies for combined human and livestock health services SAFOSO: Capacity building for risk management and mitigation related to zoonotic diseases VSF-Suisse: Implementing humanitarian aid programmes and development projects focusing on milk and egg production
6. Combat HIV/ AIDS, malaria and other diseases	INW / ETH: Linkages between HIV/AIDS and livestock production systems
7. Ensure environmental sustainability	CDE: Research and policy formulation related to NRM and environment FiBL: Service delivery for livestock production systems taking into account environmental sustainability IC: Implementing projects and mandates aiming at livelihood improvement through sustainable NRM SHL: Linking modern technology with MDGs; focus on livestock environmental issues, nutrient cycle, feed and fodder, and water resource management ZIL: Basic research, institutional collaboration, organising conferences and networking STI: Research on sustainability of pastoral land use systems
8. Develop a global partnership for development	FiBL: Inspection and support of certification bodies (local) SAFOSO: Long term capacity building STI: Developing new drugs and vaccines; economic analysis of service delivery and capacity building swissgenetics: Export of know how and semen; capacity building IC: Collaborative partnerships for development cooperation CDE: Research on poverty and environmental effects of the global commodity crisis ZIL: Research partnerships / Capacity building WHC: Develop worldwide Networks of Pastoralists' organisations

BHC	Banjara Hills Consults
FiBL	Research Institute of Organic Agriculture
IC	Intercooperation
INW/ETH	Institute of Animal Science, Swiss Federal Institute of Technology
SAFOSO	Safe Food Solutions Inc.
SHL	Swiss College of Agriculture
VSF-Suisse	Vétérinaires Sans Frontières Suisse
WHC	World Herders Council
ZIL	Swiss Centre for International Agriculture

Annex 1.
MDGs and their respective targets

Goals and targets	
Goal 1	**Eradicate extreme poverty and hunger** Target 1: Halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day Target 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger
Goal 2	**Achieve universal primary education** Target 3: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling
Goal 3	**Promote gender equality and empower women** Target 4: Eliminate gender disparity in primary and secondary education preferably by 2005 and in all levels of education no later than 2015
Goal 4	**Reduce child mortality** Target 5: Reduce by two thirds, between 1990 and 2015, the under-five mortality rate
Goal 5	**Improve maternal health** Target 6: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio
Goal 6	**Combat HIV/AIDS, malaria, and other diseases** Target 7: Have halted by 2015 and begun to reverse the spread of HIV/AIDS Target 8: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases
Goal 7	**Ensure environmental sustainability** Target 9: Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources Target 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation Target 11: Have achieved, by 2020, a significant improvement in the lives of at least 100 million slum dwellers
Goal 8	**Develop a global partnership for development** Target 12: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system (includes a commitment to good governance, development and poverty reduction both nationally and internationally) Target 13: Address the special needs of the least developed countries (includes tariff and quota free access for exports, enhanced program of debt relief for HIPC and cancellation of official bilateral debt, and more generous ODA for countries committed to poverty reduction) Target 14: Address the special needs of landlocked countries and small island developing states (through the Program of Action for the Sustainable Development of Small Island Developing States and 22nd General Assembly provisions) Target 15: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term Target 16: In cooperation with developing countries, develop and implement strategies for decent and productive work for youth Target 17: In cooperation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries Target 18: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications technologies

ENDNOTES / REFERENCES

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