Submitted Abstracts and Summaries


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More Benefit From Less Land: Rice - pulse (as vegetable + fodder) rice is a more profitable cropping pattern for resource - poor farmers in Bangladesh
Omar Ali prc@bdonline.com and Ashutosh Sarker

A field experiment was conducted at Pulses Research Centre, Ishurdi, Pabna, Bangladesh during 2002-2003 and 2003-2004 to find out the economically viable pulses (as vegetable and fodder crop) within the fallow period of Transplant aman rice (Monsoon rice) - Boro rice (Spring rice) cropping pattern and to find out the suitable variety of Transplant aman and boro rice for better establishment of pulses for more benefit of resource poor farmers in Bangladesh. First crop, Transplant aman rice (cv. BR32, BR39 & BINAdhan-4) were placed in the main plot, second crop, pulses (Lathyrus, Chickpea & Field Pea) were placed in the sub-plot and third crop, Boro rice (cv. BR-28, BR-29 and BINAdhan-6) were placed in the sub-sub-plot. From two years pooled result, it was observed that, BINAdhan-4, field pea (as vegetable + fodder) and BINAdhan-6 produced the highest yield of 5.0 ton/ha (grain), 3.25 t/ha (vegetable)+18.1 t/ha (fodder) & 7.8 t/ha (grain), respectively and also gave the highest net return of $2212/ha/year.

Multi-stakeholder analysis of farming systems development and future policy and institutional challenges for achieving SARD
Marcelino Avila Marcelino.Avila@fao.org

This session will present the salient results of a sustainable agriculture and rural development (SARD) analysis conducted on three major farming systems of the world. In the first part of the session, short presentations will be made on the SARD methodology and lessons learnt, followed by a presentation of the main results and recommendations of three case studies, i.e. the maize-beans systems of Central America, the cereal/root crop-based system of West Africa, and the lowland rainfed rice-based system of South East Asia. Emphasis will be placed on the past evolution and current performance of these systems, future scenario analysis, and future policy/institutional challenges for achieving SARD. In the second part of the session, participants will comment on the relevance of such case studies, whether they are involved in similar work and the types of results to date, and brainstorm on future policy/institutional challenges relevant to their own farming systems work.

Precision agriculture, best alternative approach for sustainable agricultural development
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Information management and its use in practical decision making at the farm level will be the foundation for sustainable agriculture in the new millennium. Precision agriculture provides a sustainable agricultural system that allows farmers to use resources efficiently and develop and maintain complete input and output records. It is a knowledge-based technological management system capable of optimizing farm profit and minimizing agriculture’s impact on the environment. To establish the technology of precision agriculture as a common
practice, there is need to develop transferable guidelines and principles for decision making in crop management. This requires both attentions to the specificity of crop production (i.e. crop rotation) of the field. High economic efficiency and ecological benefits are ensured now a days only by integrated crop production techniques. Precision agriculture can significantly increase economic and also ecological efficiency of crop management. So, steps must be immediately taken to introduce precision agriculture in Bangladesh.

**Contributions of Agricultural Extension to Rural Poverty Reduction in Myanmar,**

Khin Mar Cho [Khin.M.Cho@agrar.uni-giessen.de](mailto:Khin.M.Cho@agrar.uni-giessen.de) and Hermann Boland

The agricultural and rural development policies, characteristics of rural poor and poverty, the relationship between the agricultural production-productivity-rural poverty reductions will be discussed. The impacts of the UNDP and international NGOs projects concentrating on food security and rural poverty reduction in Myanmar will be explored. The ways how to contribute the governmental agricultural extension to the rural poverty reduction will be discussed.

**Organizational Legitimacy as Principle for Private Provision of Rural Development Activities: Evidence from Czech Agriculture**

Jarmila Curtiss [curtiss@iamo.de](mailto:curtiss@iamo.de), et al.

Since the preparations for and the actual May 2004 EU accession, the rural development concerns in the eight new EU member states from Central and Eastern Europe have considerably increased. During the structural policy formation, little consideration has been given to the rural development activities provided privately by the agricultural companies, despite their long tradition. Using the case of Czech agriculture, the proposed paper will empirically analyze the private provision of rural development activities as behavior possibly reflecting efforts to gain organizational legitimacy which secures indirect economic gains.

For further information please view following web-pages: [www.iamo.de](http://www.iamo.de)

**The Challenges of Farming Systems in Bangladesh in the Post Globalization Period**

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Farming systems in Bangladesh is in crisis and disintegrating affected largely by Structural Adjustment Programmes and Enhanced SAF of the 80s, Globalization and Liberalization of 90s and the Poverty Reduction Strategy Paper (PRSP) of 2000s causing further marginalization of resource poor farmers, becoming more dependent on external resources, experiencing technology divide, depletion in natural resource base including soil fertility and the emergence of non-farm rural sectors.

To validate the above problem adequate research data have been collected over the years that this conference will provide an opportunity and enable me to share with others to draw comments and inputs as a learning lesson for Bangladesh as well as for others to understand the performance and problems of farming systems in Bangladesh in the post globalization period. In addition, based on working experience as well as continued study of the problem, there is recognition that the farming systems in Bangladesh needs to respond to the process of globalization through pro-poor development policies, empowerment of rural communities, particularly women, good participatory governance especially at local level, access to information and knowledge based farming systems, public-private-NGO-Farmers partnership, microfinance and farmer–market direct linkage as part of the complex
development process to achieve national development and international commitments like WFS, CCA/UNDAF, MDGs and PRSP.

Enhancing capacity of academic institutions to produce gender-sensitive research and development professionals in farming systems
Helen F. Dayo  helenfd2002@yahoo.com,

Review of gender-related content in university-level curriculum of target institutions, stakeholder consultation on gaps and strategies drawing on field practice to enrich curriculum content, development of support instructional materials, capacity development of faculty and researchers to integrate gender-related content in programs/courses.

Enhancing The Role Of Farming Systems Research And Development In Local Government Development Planning And Action,
Helen F. Dayo  helenfd2002@yahoo.com,

Stakeholder consultation on the potential contributions of research and development to local government priority concerns, development of a strategy for harnessing scientific resources and development of agriculture/health/education/other sectors; sensitization and capacity for local government unit executives on the role of science in local development.

Public policies and farming practice changes in French overseas departments - the old times and the modern times
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The French Agricultural Orientation Law (LOA) supports the Multifunctionality of agriculture with Territorial Contracts (CTE). His application in French Guadeloupe (FWI) and Reunion (Indian ocean) islands clash with an action system, where institutions are still promoting a productivist model for exportation towards France. Our surveys, led with farmers involved and with agricultural development and research institutions, prove that the CTE were used to support existing situations, financial crutch or current dynamics, and not to further a new project or new development practices. "Old times" management of these "new sort" of rural incentives transformed the proposed new social contract into a shaky contract. An abuse which may be salutary to reconcile the existent productivist model and the now promoted multifunctional one. The analysis of the reasons and specificities of this inconsistency between the objectives of the Law, and the ways the CTE were developed in two islands, highlights know-how which foresee an ability for a satisfactory management by profession and accompanying institutions of the following expected Sustainable Agriculture Contracts (CAD).

International Partners for Sustainable Agriculture (IPSA)
Linda Elswick  ipsa@igc.org

IPSA is proposing a panel session at the Global Learning Opportunity (GLO) featuring partners with practical field experience at local and national levels and policy advocacy expertise at local, national and international levels. The panel will explore examples of linking local learning experiences to policy advocacy forums to advance grassroots successes and influence policymaking decisions.
The EU Novel Food Regulation – a non tariff trade barrier for small farmers and trade companies in developing countries
Irmgard Hoeschle-Zeledon and Paul Bordoni p.bordoni@cgiar.org

The Novel Food Regulation (NFR) of the EU stipulates that food which was not consumed to a significant degree in the EU before 15 May 1997 has to undergo a special notification procedure before it can be marketed and consumed within the EU. It is legally binding for all Member States. This non-tariff barrier for trade in neglected species discourages investment in supply chains and marketing in target markets, an unreasonably high burden of proof on those bringing traditional food products from the South to the EU market.

Environmental Decision Making as a Framework for Farm Policy
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Public support for agricultural policy in the US relies heavily on the perception that programs are designed to help smaller independent family farmers while maintaining a safe and affordable food supply. Nevertheless, there is an escalating viewpoint that US farm programs have become “welfare” programs for wealthy landowners and large multinational agribusiness corporations. Coupled with this are mounting challenges to biotechnology, conventional production methods, and concerns over environmental problems. This situation has created an opportunity to re-examine the goals of farm policy and create a new policy framework.

Although agriculture can be a source of environmental degradation it can also serve to deliver vital environmental services. The need is to find policies and programs that will enable progress toward a “sustainable” form of agriculture. One such framework, “Multifunctionality”, recognizes and rewards the benefits - other than food or fiber - that can come from agriculture, yet often go uncompensated in the marketplace and that can vary tremendously depending on farming practices. Although very similar to the concept of compensating for “environmental services”, as an instrument to change modes of production, multifunctionality also attempts to deal with socio-economic concerns and needs.

This policy framework has many variations in how individual nations implement their programs and some key questions need to be answered, for example:

- How to ensure that multifunctionality is not used to justify trade barriers?
- How to explicitly identify the externalities due to multifunctionality and how to value them using standard market and nonmarket valuation techniques?
- Where is the appropriate level of support for agricultural operations as well as other natural resource-based activities?
- What roles do rural communities and regional economies play in such calculations and what rewards should they rightfully expect?
A key step must be to isolate and evaluate the factors essential for a sustainable form of agriculture. This phase should aim to achieve a broad consensus on definitions, criteria and values. Although the three “E’s” - ecology, economy, and equity - have become the common standard for most definitions of “sustainability”, they do not fully encompass all elements that must be considered. As shown to the right, many other factors will need to be understood and integrated into any new policy.

Additionally, some sense of equity between the present and future generations should be examined and accounted for. The challenge for all will be to balance desires for both public welfare and market efficiency.

**Impacts of crop-livestock R&D on smallholder farming communities in Bangladesh**
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In the pursuit of the need for generation of technology and its dissemination with the ultimate goal of improving the agricultural systems in Bangladesh, several systems approaches have been followed, the Farming Systems Research and Development (FSRD) being one of the approaches to technology transfer systems evolved to its present form in 20 years. Crop-livestock farming systems research implemented by the National Agricultural Research System Institutes during the past 10-15 years in 17 FSRD sites under the umbrella of Bangladesh Agricultural Research Council, have provided rapid spread and adoption of numerous promising crop-livestock systems technologies creating varying degrees of positive and significant impacts on production, income and total livelihoods of the smallholder farmers around the FSRD and multi-location trial sites and in the vicinities. Despite some staggering constraints faced by the FSRD practitioners, the crop-livestock technologies as evidenced from the *ex-post* impact assessment of the present study, have brought dynamic and remarkable changes to the rural farming communities in food security and poverty alleviation, employment generation, gender and women empowerment, intensity of land use, income and asset generation, agribusiness development, skill development, organizational linkages, and maintaining a better environment. Future directions highlighting technology transfer and strategic alternatives for organizational and financial sustainability of FSRD are also focused.

**The Power of Agroforestry and Multisectoral Partnership in Sustainable Upland Development: The case of the agroforestry support program for empowering communities towards self-reliance (ASPECTS) project in the Philippines**
Leila D. Landicho [leila_landicho@yahoo.com](mailto:leila_landicho@yahoo.com), et al.
ASPECTS project, which was funded by the Ford Foundation, was pilot-tested in the three provinces of the Philippines aimed at developing a grassroots-oriented extension model that simultaneously addresses the objectives of community empowerment and the advancement of agroforestry education. This project harnessed the potentials of agriculture and forestry schools in empowering upland communities to enable them to extend agroforestry extension services to adjoining communities and other farmers for sustainable development. Lessons from the project implementation demonstrate the viability of multisectoral partnership in realizing a sustainable community-managed agroforestry extension services.

The essential role of livestock for poverty alleviation in seasonal rainfall environments.
Constance L. Neely cneely@holisticmanagement.org and Allan Savory

The symptoms of desertification are numerous including interalia increased droughts and floods; drying up of springs, rivers and boreholes; poverty and food insecurity; and social breakdown including violence to women and children, genocide and war. For centuries the main ‘causes’ of desertification have been attributed to human overpopulation; livestock overstocking and overgrazing and communal tenure of land. Recent discoveries have led to an understanding that desertification is not caused by the things traditionally blamed. Nowhere is this better illustrated than in parts of the United States, where despite a very low and falling population, no overstocking and private tenure of land, serious desertification is occurring. This observation, combined with the desertification in Africa of wilderness areas and national parks with no livestock or human presence points to the fact that overgrazing is misunderstood.

In Zimbabwe where all of the symptoms of desertification are present, the use of large multi-species livestock herds has enabled a demonstrated reversal of desertification and increase in livestock health and well being. This has been done on 20,000 acres adjacent to the Wange Community (truly a night-and-day scenario) and is now in the process of upscaling within the community. Managed by a local non-profit organization under the governance of the five Chiefs of the area, and using community livestock that would otherwise have died in many cases, the degradation has reversed dramatically. There has been a measurable increase in vegetation and ground cover which in turn has resulted in water infiltration and renewed stream flow and the return of many species of wildlife. Through the same period, under the same rainfall, adjacent communal land over which livestock are dispersed, has remained drought stricken with dry riverbeds, failing boreholes and mounting poverty. Livestock are clearly an answer to moving poor people out of poverty, enhancing food security, and reversing environmental degradation (addressing several key Millennium Development Goals). The Wange Community members are now keen to replicate this effort.

During the next phase, the people will be offered micro-credit loans adequate to float them out of poverty but in ‘livestock currency’ due to the economic collapse and hyper-inflation of Zimbabwe. This in many ways will be the most difficult phase – getting the knowledge gained and witnessed, to spread effectively to the community at large. Participation in this project is earnestly invited from other organizations concerned with permanent solution to poverty and desertification using livestock. The paper will present the results of livestock-based and people centred sustainable development efforts in Zimbabwe that can enhance their peoples’ land, lives and livelihoods.

Developing strategies for decreasing poverty in rural farming areas in Uzbekistan
Dr. Khasan Mamarasulov mamarasulov2@yahoo.com
The Ministry of Agriculture is promoting the decrease in poverty and environmental degradation. The development of agriculture and environmental sustainability with its impact on good agriculture practices, research on farm development and management, and close cooperation with Uzbekistan NGOs is making a difference in the of lives of the low-income farmers and the rural areas.

Based on the characterization of farming systems and an understanding of their dynamics, differentiated context-specific development pathways can be identified around which multi-stakeholder alliances and public-private partnerships (e.g., CSO, inter-governmental organizations, governments, private sector, etc) could coalesce. A challenge is to foster and mainstream such targeted partnerships with guidelines, regulations and investment practices. Such alliances are required for managing ecosystems and landscapes from farms to catchments, intensification strategies, environmental services, landcare, conservation of the natural resource base and biodiversity, livelihoods diversification, conservation agriculture, eco-agriculture, urban agriculture, and linking mitigation, risk and response for vulnerable systems and populations, including HIV-AIDS.

**Developing Public-Private Partnerships in Agribusiness Development: Easy to say but a challenge to do**
Harold J. McArthur [hmcarthu@hawaii.edu](mailto:hmcarthu@hawaii.edu)

A case example from a developing partnership between a private U.S. firm, an international NGO and the University of Hawaii to establish a candle nut oil processing plant in East Timor.

**Building Social Infrastructure for Decentralized Management of Natural Resources**
Keith M. Moore [Keithm@vt.edu](mailto:Keithm@vt.edu) et al.

In this round table, we describe the process, successes and failures associated with developing a new platform (community-based natural resource management committee) for an ethnically diverse population (involving CSO, NGO, and government stakeholders) in the context of West African decentralization and supportive of local NRM decision making and practice consistent with environmental and socio-cultural conditions. The objective of the effort was focused on raising awareness of NRM issues and building leadership capacity to increase the horizontal linkages between stakeholders in the belief that such a common action platform can increase the flow of information and open debate leading to more carefully considered management decisions and, as a consequence, increase trust between communities. We demonstrate that building associational life is not only a matter of gathering people together -- men and women, regardless of ethnic or socio-professional status -- but also requires the development of individual capacities (training in functional literacy, association management, financial management, NRM texts, laws and codes, improved NRM practices, management and reconciliation of the conflicts, etc.) in order for them to assume active roles in the development of their community and to support the development of extra-communal relations and, in particular, the role played by training in conflict management, given its importance for the development of self-confidence and building of credibility for the committee in the development and the safeguarding of the community’s natural resources.

**A participatory approach in agro-environmental policy development and decision-making**
Katrin Prager [katrin.prager@agrar.hu-berlin.de](mailto:katrin.prager@agrar.hu-berlin.de)
The paper analyses a participatory approach in agro-environmental policy development and decision-making on the state level in Germany. The approach comprises an interactive PC-based model and the facilitation of the corresponding communication process. Research objectives are improved communication processes and an enhanced quality of political decision-making.

Sugarcane based farming systems research and some developed technologies
M Khalilur Rahman bsri@bdonline.com, et al.

Farming Systems Research and Development (FSRD) Programmes under Bangladesh Sugarcane Research Institute (BSRI) developed a series of technologies that were demonstrated in different agro-ecological zones of Bangladesh. The technologies not only increased the crop production & economic benefit per unit area and time of resource poor farmers but also enhanced women participation in agriculture, agro-processing and marketing. Research findings showed that sugarcane with intercropping like potato, onion, garlic, pulses, different summer vegetables etc. defined 45.48% sugarcane equivalent yield advantage over sole cropping, internal rate of return (IRR) was found about 26%. Sugarcane based FSRD concept has become widely popular phenomena among the sugarcane farm families of Bangladesh, which ensures positive impact on food securities to the farmers as well as nations.

An integrated approach to food security assessment in the context of farming systems in fragile areas
Julieta R. Roa Julie.Roa@wur.nl, Anke Niehof and Lisa Price

This paper elaborates the framework and methodology of assessing food security particularly of households farming in less favored environments. Food security is evaluated using three dimensions: food availability, food access, and food adequacy. The framework and analytical tools are applied on the empirical data from two formal surveys of 220 households, a mix of participatory tools, and twelve case studies in Leyte, Eastern Visayas region, Philippines during the period 2002-2004. As the paper articulates a useful analytical framework and tool feasible in development work particularly in farming systems located in fragile areas, policy implications are also drawn relevant for such development.

Sustainet
Helga Stamm-Berg Helga.Stamm-Berg@gtz.de

Sustainet is a project-cooperation between the German Council for Sustainability, German Ministry of Economic Cooperation, German Ministry of Agriculture, Misereor, Bread for the World, German Agro Action and GTZ (German Development Cooperation). Experiences from around the world confirm that sustainable agriculture can make a significant contribution to fighting starvation worldwide. For peasants in Southern countries, in particular, it offers a realistic way to increase their income. Despite its major potential, in many cases even successful sustainable agriculture models have not been able to gain a strong foothold. The goal of Sustainet is primarily to study the successful approaches and concepts - the best practices - of projects in the field of sustainable agriculture and then to identify factors that are relevant for scaling up such projects. Our pilot regions are: India; Kenya/Tanzania; Peru/Bolivia; Brasil.
Globalisation, malcontents, and asymmetric impacts on smallholders
Aysen Tanyeri-Arbur Aysen.TanyeriArbur@fao.org

As globalisation sweeps across developing countries, it leaves in winners and losers in its path. This round table gathers experienced researchers on the topic to identify the range of policy responses which would increase the opportunities for smallholders and rural poor, and ameliorate the negative effects.

Role of supporting organisations for agricultural producers in the Czech Republic,
Axel Wolz wolz@iamo.de et al.

Agricultural producers all over the world are in need of organisations to their support to be economically successful. However, not all of them are joining as members. What are the motivations and reasons of some to join while others do not? Based on a survey among agricultural producers in the Czech Republic, a country which embarked on the transition from central planning to the market economy, it is looked at the motivational factors and deduced how these can be strengthened.

An analysis of agriculture-environment interactions and policy options for sustainable agriculture in Eastern Al Ghouta (Syria),
Samira Al Zoughbi, faop@net.sy

Agricultural sustainability has been recognised as a strategic development objective, and agricultural-related environmental issues have been ranked as top priorities in Syria in the last decade. As a consequence, many research studies have been carried out so far on this topic. One common result of these studies is that the environmental problems have arisen because of many factors, like policy and market failures, institutional failure, and lack of investment. The paper will focus on such a policy conundrum aiming at better understanding of the relationships between agriculture and environment, and therefore at analysing policy options for sustainable agriculture in Syria.

Soil and water conservation practices and improved livestock farming systems for sustainable agriculture and food security achievement in the semi-arid region of Burkina Faso
Jean Sibiri Zoundi jeansibiri_zoundi@yahoo.fr and Robert Zougmore
robert.zougmore@messrs.gov.bf

Mixed crop-livestock smallholder farmers in the northern region of Burkina Faso are faced to environment uncertainty and the main constraint is natural resources degradation. This case study on best practices indicates how can combined soil and water conservation practices and improved livestock farming systems enhance sustainable agriculture and food security achievement? This study highlights the role of success factors such as the relevance of agricultural innovations generated, the existence of investment support for farmers, the demand-driven approach developed for innovation process and, farmers’ connection to markets.
Reducing rural poverty - the farmer-market linkage and the farmer-agro industry linkage.
Victoria Adarkwa Aduasah

Farmers in Ghana have for a long time depended on the market as the only means of disposing of their agricultural produce. This has led to exploitation by middlemen or retailers. Is that the best option? An alternative may be farmers being linked to the agro-industry, which would add value to their produce.

The Role of Cooperatives in Improving Quality of Life and Providing Sustainable Development
Ana Alice Vilas Boas and Jean Carlos Baldessera ppgen@ufrrj.br

The aim of this paper is to present a comparative analysis about two agricultural cooperatives in Brazil, in order to better understand the social role of cooperativism in improving quality of life and providing sustainable development. Farmers and consumers may benefit from services offered by cooperatives, everywhere in the world. Nevertheless, they will not provide good quality services if people do not know enough about them and their main principles. There are many studies about this kind of organisation, even in Brazil. However, very few Brazilian people are engaged in a cooperative. This study shows that many people do not know enough about the advantages of getting enrolled in this kind of organisation and the role of cooperativism in improving trade and social life in local regions. Cooperatives exist for people in difficulties and people with cooperative spirit. It is because the mutual aid and the reciprocity among partners are basic principles for the proper development of members, thus contributing to have a world more just and balanced. Moreover, lack of appropriated communication among members, committee members, their families and consumers is also another big issue in dealing with this subject. In this context, one of the roles of training in rural areas should be related to optimising the relationship among actors directly or indirectly involved with cooperativism and preparing members to manage properly their own cooperatives and keep, at the same time, an eye on the social aspects of life that may be strengthened by the cooperative movement and by social responsibility of other private companies.

Innocent Azih

A private sector-smallholder farmer partnership institutionalized with public sector support aims at raising small farmer technical, business and economic capacity. Impact analysis on farmer productivity, competitiveness and economic empowerment is being done for policy advocacy.
Supermarkets and small growers
Julio Berdegue jberdegue@rimisp.org

Changes in agrifood chains in developing countries in Latin America, Asia, and Africa, brought about by the rapid growth of supermarkets which are spreading rapidly around developing regions. These supermarket chains have great market power and are transforming agricultural marketing linkages for small holders in many regions.

Agricultural and rural advice management approach: reference executive of the frame of partly industrialized aviculture of the region outskirts of Dakar, Senegal
Cyprien Awono Bessa ogungbileao2000@yahoo.co.uk et al.

The globalization of the agricultural exchanges lauded by the WTO likelihood contributed to the 70 % loss of the poultry breeding in Senegal between 1996 and 2002. This situation invites to revise the device of frame of the aviculturists, the widely unsuitable device in a context of greater liberalization. The communication tries to show what would be the possible ways of adaptation of this device.

Traditional Native Food, Biodiversity And Culture
María Calzada cocinadelatierra@sion.com

Biological and cultural diversity is the root of rural life. Peasant and indigenous groups are guardians of biodiversity, for they farm products and species that don’t respond to the demands of external markets; they just continue with traditions inherited from their ancestors. In order to develop, a culture must have a favourable environment, where farmers benefit from their own organizational structures and process development, with the support of public policies that favor active participation in local markets. Native food, more than a tool or an expression, is a ritual, another actor inside this general outline of sharing and exchange of local knowledge. Food is one of the most important manifestations of culture, one of the more relevant means of expression, where every country and region has the opportunity to show its own strengths and productive capacity. “Native Gastronomy,” therefore, is a fusion of old knowledge and new trends. The interaction between these two universes is a strategy for the dissemination of culture, customs and traditions, and for the education in biodiversity.

The role small retailers and small-scale producers’ organisation in enhancing and strengthening markets linkages and local qualification process
Claire Cerdan et al.

Small-scale farmers faced rapid changes in the organization of marketing channels in the developing world. Supermarkets chains are spreading in Latin America and wholesale markets are losing space. Food product characteristics tend to be no longer determined by producers or consumers, but by traders, supermarkets and agro-industries that set their own standards. The communication aims to analyse the role of the small retailers and the role of the producer’s organisations (cooperatives) to improve competitiveness of small-scale producers by enhancing and strengthening markets linkages and local qualification process. Our fieldwork is specifically based on four experiences, localised in the south and in the northeast of Brazil. It presents cooperatives and retailers networks, which have overcome a number of obstacles to keep a market position on differentiated supply chains: cooperatives of organic production (Cooperfac, Cooperagreco), fair trade association for orange juice
(Apaco) in the south of Brazil-Santa Catarina and retailers networks of press curd cheese in the Northeast of Brazil.

The communication point out that, actors could offer for small-scale producers, knowledge, information and resources to meet quality standards and formal markets specifications. It will show also that social and local networks or organizations can give producers flexibility, credibility, original know-how and can facilitate the emergence of innovations, resulting in more sustainable market access for small producers. In conclusion, we put theses experiences in perspective to design some orientations for public policies.

**Importance of improving the conditions of commercialisation for farmers**  
**Rubber smallholders in the South-West province of Cameroon,**  
Bénédicte Chambon, bchambon@camnet.cm

Based on a survey carried out with rubber smallholders, the objective of the paper is to show the consequences of a situation where farmers have no choice to sell their crop on the smallholders practices and production. At the end, some propositions are made to improve the situation.

**When do smallholder farmer-market linkages increase adoption of improved technology options and lead to increased use of natural resource management strategies.**  
Robert Delve r.delve@cgiar.org et al.

Case studies from East and Southern Africa linking technology development to market opportunities will be used to highlight and discuss where markets for existing and new products has led to increased investment in natural resources, market orientation and adoption of technologies by smallholder farmers.

**Organic Agriculture and Alternative Certification**  
Cathy Rozel Farnworth cathyfarnworth@hotmail.com

I would like to make a presentation, which I would ensure was interactive and enjoyable - probably through engaging participants in pair work and getting them to think through a few thought-provoking issues – on my work with organic smallholders and plantation workers in Madagascar on an alternative model for organic certification.

Abstract of Proposed Presentation (I would select elements from below)  
**Starting Point:** The relationship between Southern producers and Northern consumers in organic agriculture is impoverished. Although producers and consumers are actually connected through lengthy commodity chains, there is generally a strong sense of felt disconnection. They do not feel part of the same system. People in the chain lack physical presence for one another: they exist in the realm of ideas, if at all.

**Tackling the Problem Part 1:** As part of my work to find ways of creating what I call ‘quality relationships’ between producers and consumers, I have been working on a ‘quality of life toolkit’, which is capable of capturing the needs and aspirations of smallholders and plantation workers in situ. The aim is to contribute a new ‘bottom-up’ methodological approach to the process of social certification in organic agriculture. I have carried out extensive research with organic smallholders and plantation workers in Madagascar in the development of the toolkit.
In Rome, I could present some features of the quality of life toolkit, discuss some of the findings and then turn to some of the ‘difficult’ issues that arise for other stakeholders when trying to develop and implement bottom up certification initiatives.

Tackling the Problem Part 2: It would also be possible for me to talk as part of this presentation – or another - about my novel concept of a social label. This is a product label that could be validated by data and information produced by the quality of life toolkit during the process of social certification. The prototype label I have developed occupies quite different ground to labels dealing with the conditions of production, or trading relationships, or international labour standards. Attention is paid to the values and aspirations that producers actually hold. The aim is to ensure that these are supported, rather than eroded, through the process of production for the Northern market. My concept of a new social label invites actors in organic producer to consumer chains to engage in a richer and more meaningful relationship that extends the realm of legitimate values included in the market exchange of products. An important feature of the label is its ability to acknowledge and build upon the ethical values held by the consumer. Research based on surveys, interviews, and focus groups was carried out in Germany in order to assess the receptiveness of organic consumers to such a label in the context of their own ethical lifeworlds.

Collective action by smallholder organic farmers in South Africa
Lawrence Gadzikwa  Lgadzikwa@yahoo.co.uk

The paper considers collective action by smallholder organic farmers in producing and marketing organic crops in South Africa particularly focusing on organisational and contractual arrangements that promote market linkages

Improving farmer decision making and research-extension-private sector linkages for identifying organic and fair trade export opportunities in Uganda.
Michael Hauser  r.delve@cgiar.org  et al.

Increasing income opportunities through certified organic or Fairtrade exports involves much more than just growing the crops. Linkages to new research information and extension advice are needed to ensure the competitiveness and sustainability of these systems. Experiences from Uganda within a research-extension-exporter research for development program will be discussed.

Smallholder timber: livelihoods diversification and landscape sustainability
Christine Holding Anyonge  Christine.HoldingAnyonge@fao.org  et al.

Trees on farms have long been recognised as protecting and often enhancing soil fertile, assisting in soil and water conservation and proving fodder, fuel wood and construction materials for rural households. They also help main biodiversity and enhance the landscape. In addition, commercial production of timber on farms in the tropics, either as scattered trees or as small scale woodlands as a potentially important element of farm livelihoods. This mutli-media presentation, drawing in particular on experiences in Kenya and Indonesia addresses the potential of farm level timber production, and addresses key issues at the landscape and household scale: the potential of farm-level timber to enhance farm livelihoods species selection and germplasm access market and marketing chain analysis to support farm-level timber production transparency in legislation, farmers rights, and support to small
owners, and small scale wood enterprises in technical entrepreneurial and organisational skills

**Transforming of agriculture-based agribusiness systems through process re-engineering:**
*A shift from low-value commodities to high-value and price-stable farming systems-based commodity*
Dr. Romeo V. Labios  romylabios@yahoo.com

Goal: To create an entrepreneurial mindset among farmers and fisherfolk for sustained productivity and economic profitability. General: To establish sustainable science- and technology-based agribusiness-oriented rural communities to generate more jobs and develop the agricultural lands and fisheries resources for increased productivity. Specific Goal: To increase total farm productivity and income within the context of a sustainable production system. To enhance the capacity of farmers and fisherfolk to venture into agribusiness by providing training based on needs identified with them. To link the farmers and fisherfolk with support service providers including market, traders, distributors, and dealers to ensure product quality at reasonable prices. Strategies: The proposed activity will include paper presentations of case studies, a plenary discussion, and a workshop that will cover, but are not limited to, the following:

- Empowerment of selected farming communities to go into diversified rural agro-industrial enterprises guided by a market-driven and technology-propelled RDE strategy.
- Enterprises that are geared toward providing a better life for all, global competitiveness, efficiency, equity, sustainability, and strong private sector participation.
- Development of the necessary technological innovations, knowledge, and support services to appropriately deal with anticipated constraints and challenges in transforming agriculture-based agribusiness system.

**Participatory Guarantee Systems for Organic Production**
Alberto Pipo Lernoud

Organic producers all over the world have been developing methods for guaranteeing the organic status of their product to consumers, processors, traders and –increasingly- also to governmental agencies in charge of food quality. The International Federation of Organic Agriculture Movements (IFOAM) has been developing an organic guarantee system with a democratic process of consultations with the people involved in organics since the 70s, which has resulted in a sophisticated and effective structure that involves Standards and Accreditation. In the local sphere, groups of farmers in different countries have meanwhile developed less formal methods for guaranteeing the ecological status of their production, especially in the countries of the South, looking for systems more adapted to their realities. Informal systems also exist in the North, where the interest is growing. The reasons for these “alternative” methods of certification vary, but are often a result of high certification costs, the complexity of the paperwork on the formal systems, or a political ambition to strengthen the farmers. In such cases ISO 65 type certification is not seen as necessary. Following the worldwide agreement on what the word “organic” means, most of these local groups use the General Principles or the Standards that were developed over the years by the organic
movement. But the application of those Standards in the overseeing of production, processing and trade varies widely. These systems often address not only the quality assurance of the product, but are linked to alternative marketing approaches and community networks. All over the world, box schemes, home deliveries, community supported agriculture groups (CSA’s or Teikei’s), farmers markets, popular fairs and other direct and indirect sales arrangements help to educate consumers about products grown or processed with ecological methods, which build trust and confidence in organic agriculture. Some legislations, like the Brazilian Law on Organic Products, are opening a door to participatory systems applied to local markets. It is in this context that IFOAM and MAELA (Latin American Agroecology Movement) promoted the International Workshop on Alternative Certification, hosted by the NGO Centro Ecologico, in the North of Porto Alegre, State of Rio Grande do Sul, in April 13 to 17, 2004, and built an ongoing Working Group on Participatory Guarantee Systems (PGS WG) that is analyzing and comparing the local experiences all over the world and studying the viability of these systems in relation to the ISO 65 systems of certification and the international market of organic products.

**Mechanized Farming? The answer to drastic food security solution for Malawi.**
Joel Luhanga mzuniforestry@sdnp.org.mw

Almost 80% of the main staple food (maize) in Malawi is produced by subsistence farmers. For decades food shortage is met through donations from outside the country. Subsistence farmers who are in cooperatives should be supported to go into mechanized farming for Malawi to achieve food security

**Strengthening Market-Orientation of Agricultural Research in Low-Income Countries: The Case of Lake Zone, Tanzania**
January M. Mafuru januarymafuru@yahoo.com et al.

The institutionalization of the Farming Systems Approach (FSA) in low-income countries has improved farm-level systems analysis. Thanks to FSA, farmers’ concerns have increasingly been focused on when developing research agenda. However, benefits from improved farm production have often not been translated into income gains for semi-subsistence farmers, which have obviously inhibited widespread adoption of, for example, improved crop varieties. This paper argues how the application of a sub-sector approach (SSA) as a complement to FSA can improve the market orientation of research, thereby helping facilitate the generation of recommendations, potentially resulting in successful commercialization of production by semi-subsistence farmers. We use research data from the Lake Zone of Tanzania to show how preferences concerning improved sorghum varieties can vary as we move from the producer to the consumer. The paper concludes that combining FSA and SSA has the advantage of strengthening linkages between farmers and consumers, which can enhance the adoption of financially viable agricultural technologies.

**Challenges And Opportunities For Agriculture Marketing : The Case Of Small Holder Farmers In Malawi**
Elizabeth Manda and George Kanyama Phiri
Agriculture is the mainstay of Malawi economy. It accounts for 45% of the gross domestic product and 90% of annual export revenues, supports 85% of the working population deriving their livelihood from agriculture.

Between 1981 and 1994, Malawi implemented several structural adjustment reforms, which aimed at liberalizing the economy. The objectives of the reforms were to let the market forces play a significant role in the allocation of resources and reduce government role. It was therefore perceived that since government role will be reduced, the markets will become more efficient; and farmers would get good prices for their inputs and output products as a result of increased competition from the numerous players in the market. This has however not been the case. The reforms resulted in smallholder farmers loosing both guaranteed prices and markets for their products, which used to be there through the Agriculture Marketing Development Cooperation (ADMARC). Agriculture marketing instead became characterised with a lot of market imperfections. One major factor which has contributed to these market failures is lack of, timely and reliable market information which would assist farmers in bargaining for better prices but also have an idea where the markets are. Without timely or no market information poor farmers operate under huge risks of not knowing whether their product will be sold, where and at what price. As a result once the product is produced farmers tend to spend more time and resources looking for markets and end up selling to middlemen at very low prices, and buying inputs at very high prices.

The rise of supermarkets in Africa since the mid-1990s is also another challenge to small farmers in Africa and Malawi has not been spared. In Malawi now we have the following supermarkets – Shoprite, Seven Eleven, Peoples Trading Centre among the most common. The rise of the supermarkets in Malawi is transforming the food retail sector. Instead of consumers sourcing their basic food requirements from the open council markets now source them from supermarkets. This is posing a challenge for the small-scale suppliers to meet the supermarket standards required for them to supply those markets as compared to the city council open markets where packaging and standards are not an issue.

The rapid development of the supermarkets sector implies that supermarkets will increasingly influence the structure and condition of the agri-food system. As they increasingly dominate food retail, they will determine the conditions, and the potential, for small farms and firms to sell agri-food products to the urban market due to increasing urban population and incomes. Small farms and firms need these dynamic markets for small producers to escape from poverty. Supermarkets require larger volumes, specified quality standards, and packaging sizes among others. These requirements become market barriers to many farmers.

Malawi is a country in which the majority of small farmers cannot yet meet the standards of the supermarket; there is therefore some reliance on importing produce to the stores from e.g. South Africa or other countries where the needs can be met.

Another challenge for small farmers to access the niche markets for especially organic and fair trade food systems for export markets in Europe is the cost of certification. The cost of certification is just unaffordable.

In Malawi now there are some initiatives aimed at linking small farmers to markets of both inputs and outputs. One such initiative is the Initiative for Development and Equity in African Agriculture (IDEAA) Malawi Program under University of Malawi Bunda College of Agriculture with Rockefeller Foundation support.
Initiatives Aimed at Promoting both Inputs and Outputs Markets: The case of MACE Project of IDEAA

The IDEAA Program is implementing a project called the Malawi Agriculture Commodity Exchange. The project is aimed at making agriculture markets work better for smallholder farmers by lowering the huge risks and transaction costs that hinder market development. The specific objectives include the following: facilitate linkages between sellers and buyers of agricultural commodities; empower farmers, and other market participants with relevant and timely marketing information and intelligence that enhances their bargaining power and competitiveness in the market place; and provide a transparent and competitive price discovery mechanism. The major expected impact is enhanced farm productivity, incomes, food security, reduced poverty and wealth creation among poor farmers and the national economy.

The program is a public/private sector lead initiative because of the high levels of poverty hence not viable to be implemented on a commercial basis; and it is also however difficult to guarantee its sustainability if implemented on public good principles because of the failures of past initiatives once donor funding dries up. The program is commodity neutral covering a number of important agricultural commodities because farmers deal with many agricultural crops and commodities; and also because of the diversity of agriculture commodities found in Malawi by region. Initially three market information centers have been opened in Limbe, Lilongwe, and Mzuzu. The project is being implemented in collaboration with International Crops Research Institute for Semi Arid Tropics (ICRISAT), Sasakawa Global 2000 and Telekom Networks Malawi Limited which is a Mobile phone service providers.

The project has been active since September 2004. Both buyers and sellers are using the services. It uses various channels such as Market information centers, radio, website and Short Messaging Service. Small farmers because of their low volumes are encouraged to bulk their produce as a group so that they could be able to sell to large buyers who require large volumes. A lot of trade is taking place through the system and there is hope that as time passes a lot of international buyers will be able to use the system.

Socio-Economic Implications Of Changes In The Structure Of Fertilizer Prices In Malawi,
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Increased productivity in Malawi’s agricultural sector and reduction of poverty and hunger, principally depend on increased adoption and use of improved technologies such as organic and inorganic fertilizers, hybrid seeds, and crop protection products (CPPs). Currently, it is estimated that about one third of the farming population use fertilizer. It is also estimated that 160,000 mt of nutrients are depleted from Malawian soils each year while 70,000mt are replaced in the form of inorganic fertilizers IFDC (2003). This represents a net loss of about 90,000mt. In order to restore nutrient balance annual consumption of fertilizer which is estimated at 200,000 mt needs to be trebled. Unless fertilizer prices are reduced to affordable levels, the trebling of fertilizer consumption would be unattainable considering that the country’s an average per capita income is US 160 (World Bank 2003) and also that more than 65 per cent of the country’s population live below the poverty line.

The Malawi economy just like other economies within the region has undergone some structural reforms beginning from the early 1980s to create a conducive environment for poverty reduction, growth and development. Principal among the reforms within the
agricultural sector was the liberalization of the agricultural markets with the principal goal of increasing private sector participation in agricultural input and output marketing. Increased private sector participation in agricultural marketing was also envisaged to lower transaction costs which would result in lower prices of commodities such as fertilizers to levels comparable to those prevailing on the world and regional markets. This paper analyses changes in the structure of fertilizer prices over the past five years and examines the socio-economic implications of such changes.

**Social Justice Standards in Organic and Sustainable Agriculture**
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Speakers from farmers, farm workers, IPs, and NGOs will address incorporating social standards into organic and sustainable agriculture practice and policy, including working toward food labels with verifiable claims about such values as farmers' rights, farm workers' rights, fair trade and indigenous peoples' rights. Policy implications and partnership efforts between agricultural workers, farmers, NGOs and industry over the past three years will be discussed.

**The Struggles of the Upland Vegetable Farmers in Northern Philippines: The Initial Impact of Trade Liberalization**
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This paper presents a case of the market-related problems and difficulties of the upland vegetables growers in Northern Luzon including their coping mechanisms. It will describe the interactions of the various factors that assisted the poor upland farmers in coping with their poverty conditions as they engaged in the competitive market conditions. Towards the end of paper is a recommendation to the upland farmers and small vegetable entrepreneurs to cooperate and link to address the problem of increasing influx of imported agri-products due to trade liberalization.

**Livelihoods diversification and other strategies to improve the income, diets, and nutritional status of vulnerable populations in Ghana,**
Grace S. Marquis  [gmarquis@iastate.edu](mailto:gmarquis@iastate.edu) et al.

Were identified and the process by which they helped develop interventions to improve the well-being of Ghanaian children. Using PRA, stakeholders examined barriers, analyzed data, conceptualized frameworks, and proposed strategies to diversify livelihoods and improve income, diets, and nutritional status.

**The role of poultry meat export in the economic dynamics of Iran and the Middle East region,**
F. Mirzaei, S. Yazdani  [f_mirzaei@asri.ir](mailto:f_mirzaei@asri.ir) et al.

In the Middle East, agriculture is the largest contributor to the gross domestic product and foreign exchange, and is the second largest employer. Yet despite its economic importance, it is largely overlooked in the development of new technologies and in the allocation of trained human resources. Agriculture in the Middle East focuses on new ways to improve food production, the challenges of a largely arid land, and managing limited agricultural resources. Agriculture is one of the oldest income sources in Iran. Close to one-third of the working population are engaged in agriculture and related industries such as poultry farming.
Agriculture plays a significant role in the Iranian economy: Agriculture accounts for 27.8% of the GDP, and employs 26.1% of the labour-force. Agricultural products account for 47% of non-oil exports. Poultry meat contributes directly to food security because there are no taboos against its consumption. With regard to F.A.O annual reports (2004), Iran has been rated 1st producer and also 1st exporter of poultry meat in the Middle East region. Capital stock in this industry consists of Breeding Farms (lines), Grand Parents (GP), Parent stock (PS), broilers, slaughter-houses. The dependant industries of governmental and private sectors amounts to 4000 Billions Rials ($5 billion). The objective of this paper was to study the dynamics on comparative advantage of Iran’s poultry meat export in the Middle East market

**Risks assessment, market uncertainty and diversification strategies for rubber farmers: a comparison in Indonesia and Cambodia**

E. Penot [penot@cirad.fr](mailto:penot@cirad.fr) et al

The prospective analysis using farming systems modelling may help in exploring farmers’ strategies and possibilities of scenarios in various situations such as pioneer zones, rehabilitation areas or traditional tree-crop belts, in humid tropics; in a new context of globalisation, decentralisation and markets uncertainty. Economic modelling, linked with a social and historical analysis may contribute to build in partnership with farmers and developers better and more adapted alternatives in term of decision making processes. This can help farmers to make the right decision at the right time concerning their future investments, in particular when tree-crops are concerned. CIRAD/INRA/IAMM have developed a software called « Olympe » that enable such modelling of farming systems as well as farming groups. The approach is aimed to improve farmers’ understanding of their own situation, of their evolutive socio-economic context as well as to provide orientations for agricultural and development policies for institutions or donors. The prospective analysis lead to scenarios about potential farms trajectories that might be used to the definition of agricultural policies, recommendations domains, and measuring impacts in order to address policies to farmers’ reality. A comparison between situations of rubber farmers in Indonesia and Cambodia provide case studies as illustrations of such approach.

**Agroecological and fair trade food systems,**

Sergio Pinheiro [pinheiro@epagri.rct-sc.br](mailto:pinheiro@epagri.rct-sc.br) and Miguel Altieri,

The idea is to present and discuss how innovative and alternative agroecological production, processing and fair-trade food systems can (and already are in some cases) make a difference for rural and urban people (focusing on the poorest) as well as for the environment. I am sure there are many other agroecologists like Miguel who would like to participate in this section.
**Using Seed Markets in Disaster and Recovery to Bolster Vulnerable and Poor Farmers.**
Tom Remington  tremington@crsearo.org and Louise Sperling  l.sperling@cgiar.org

This paper focuses on markets as a strategic point for supporting vulnerable farmers and their seed systems particularly in disaster periods—e.g. conflict, drought. Drawn from new field evidence across 10 African countries, the paper shows seed to be generally available (i.e. not lost) and the products on offer to be of acceptable qualities and varieties—even during crisis. The aim of ‘good practice’ should be to bolster functioning markets, not undermine them, thereby linking recovery to longer-term development from the initial stages. The paper concretely describes practical options for giving such support, including the use of vouchers for asset transfer.

**Inventing a middle man**
Delbert Rice  r.delve@cgiar.org

The Ikalahan and several other mountain communities had the possibility of marketing high value products but were frustrated because they did not know how to market. They got together and established their own marketing arm, the UPLAND MARKETING FOUNDATION, Inc., with financial help from some foreign NGOs. The UMFI has enabled several marginal upland communities to eliminate poverty by helping them produce marketable products and then market them profitably.

**Diversification of the incomes of the producers within the framework of the production of cocoa resulting from organic agriculture: the cocoa "bio équitable" in Ecuador**
Gilles Roche  gilles.roche@cirad.fr and André Deberdt

In agreement with the schedule of conditions of French association "bio équitable" the chocolate company KAOKA, sets up in partnership with producers’ organizations an integrated sector of fine and organic cocoa. The presence in the plantations of cacao-trees of many intercalated and perennial cultures (citrus fruits, bananas, plantains, fruits) which either are used for self consumption, or sold at low prices on conventional market, could be better developed within the framework of an associative marketing on organic sector. These associate productions are difficult to produce in intensive organic culture. The producers’ organizations now dominate the modalities of organic cocoa. An optimization in the setting in market of these associated products would be facilitated by the experience gained on the cocoa. That is the stages of the installation of this diversification which is the communication object.

**Modern Agrifood Systems**
Carlos da Silva  Carlos.DaSilva@fao.org and Susan Minae,

The challenges involved in promoting the modernization of agrifood systems will be highlighted. The presentation and discussion of cases of successful experiences in modern agrifood value chain design and management should provide the basis for the proposal of private strategies and public policies conducive to market access improvement, farm income growth and rural development. Particular emphasis will be given to the issues involved in the integration of small holder farmers into modern agrifood systems under efficient and equitable chain coordination arrangements.
Productivity and profitability of diversified farming under rainfed rice-eco system of Chhattisgarh state in India
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In India, Chhattisgarh state occupies a total geographical area of 13.51 m ha with a gross cropped area of 5.8 m ha. The total forest area in the state occupies 5.96 m ha (43.8%). Chhattisgarh state comprises of 16 districts which are divided into three agro-climatic zones viz. Chhattisgarh plains, Baster plateau and Northern hill zones. About 74 per cent area of Chhattisgarh plains, 97 per cent of Baster plateau and 95 per cent in Northern hills are rainfed. In Chhattisgarh, the total population is 20.79 million out of which 32.4 per cent are scheduled tribes (ST) and 12.2 per cent are scheduled caste (SC). Thus, the weaker sections constitute about 44 per cent of the total population. The male female ratio of the total population is 990 female for every thousand male. Nearly 80 per cent population still lives in villages. The population density is 154 per sq. km. The per capita gross cropped area is 0.26 ha. The irrigation facilities are very poor and irrigated area is just about one fifth of the total cropped area in Chhattisgarh. The topographical variations in the state have created a diverse soil types viz. Entisols, Inceptisols, Alfisols, Vertisols and Mollisols. Rice is the foremost crop, grown in about 3.6 million ha area, which covers 77 per cent of net sown area. Next to rice are pulses followed by minor millets, oilseeds and maize. In rabi (winter) season major area is under pulses, oilseeds and wheat. Lathyrus, chickpea, wheat and linseed are the main crops. Lathyrus (about 5.8 lakh ha) is grown as a relay crop in Chhattisgarh plains. In Chhattisgarh plain most of the land remains fallows during post-rice season. The region has enough possibility of residual moisture under rice based farming system. Presently, area under oilseeds and pulses in the state is about 12 per cent and the productivity is poor as compared to the national average. The productivity of oilseed and pulses is very low in this region because these crops are grown with minimum care, lack of technical knowledge, unavailability of improved variety seed, social constraints, lack of irrigation facilities, good market support price, imbalance use of fertilizer etc. Considering all these facts into consideration 150 numbers of on farm trials (OFTs) were conducted during 2002-2004 under different villages of Raipur and Mahasamund district of Chhattisgarh state to evaluate production potential of different crops after rice. In the trials early varieties of rice has been tried in kharif season (rainy) followed by chickpea, safflower, lentil, coriander and fenugreek. The results revealed that the cultivation of coriander after early variety of rice was found quite profitable with the net return of about Rs. 12,000 per hectare.

Assessment of Sustainable, Suitable and Stable diversified agro - enterprises to augment income of farm families under rainfed rice-based production system of Chhattisgarh State in India
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Rainfed rice ecosystem occupies an important place in Chhattisgarh state of India where 80 per cent of rice is grown as rainfed. The productivity of rice is very low (10 q/ha) as compared to national and world average. At present, the available soil moisture after the harvest of rice is not judiciously utilized for the second crop. The cropping intensity of Chhattisgarh is only 121 per cent. After the harvest of rice 1.0-1.2 million people migrate to neighboring state in search of employment. To check migration and increase income. First task was to introduce and convert the mono cropping area to double cropping. Farmers were encouraged practicing of early rice followed by chickpea, safflower, lentil and linseed crop results revealed that on an average benefit of Rs. 8500/- per hectare was obtained. Various sustainable, suitable, agro enterprises were assessed suiting there farming systems. Edible
mushroom cultivation during lean period (after the harvest of rice) may help to generate employment create a subsidiary agro-based income source, permit best utilization of huge agro waste, within limited space and investment fetch good amount of foreign amount of exchange to the state (Thakur, 2004). Alternatively, rice-fish diversification farming system ensures food nutrition, optimum land and water usage, production profit employment and environmental security. In rainfed medium to heavy soils, rice-fish integration based on the principles of rainwater conservation has recorded highest rice grain yield of 3.63 tones per hectare and fish and prawn yield of 1.28 tones per hectare in a season. Thus, rice-fish based farming system can be a sustainable and perspective enterprise for the resource-poor, small and marginal farmers of this state (Chouhan, 2004). Considering all these facts, 49 on farm trial (OFTs) on rice-mushroom farming system and 84 OFTs on rice-fish farming system have been conducted during 2002-2004 at different villages of Raipur and Mahasamund districts of Chhattisgarh state under the project “Technology assessment and refinement through Institutional village linkage programme”. On perusal of the findings the farmers practicing rice- mushroom enterprises are earning an average annual income of Rs. 16,000 per hectare, whereas, farmers practicing rice-fish enterprises are getting Rs. 40,000 per hectare per year. 21 OFTs on goat rearing of improved breed Jamnapari is another source of having additional source up to Rs 21000/- per year. Similarly 26 OFTs of high-tech improved nutritious garden also helps to provide an annual profit of Rs 11000/- plus nutritious food for the family. The farmers select various enterprises according to there socio economic condition.

**Organic Olive-oil Production in Greece**

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This paper presents cons and pros of the organic olive oil production in Greece. Also, the paper explores the factors that make producers to continue or not the production of organic olive oil. It was found that producers ignore the most recent methods for organic production, also there are no organized centers for distribution and because there is no advertisement, consumers are not aware of the organic olive oil existence. The analysis of a generalised linear model showed that only the “Seminars’ Attendance” and “Human Labour” were significant in explaining the variation of organic olive oil productivity.

**Social complexity, organisational culture and the food chain**

Alice Woodhead alice.woodhead@brs.gov.au and Roger Packham

Complexity in the food chain is increasing due to a number of pressures including trade liberalisation, global economy, information explosion, demands of consumers and community concerns about the way agriculture is practised from environmental and food safety perspectives. This aim of this paper is to discuss the use of systems methodologies to explore the cultural and social complexity inherent within a food chain taking the sugar industry in northern NSW Australia as the exemplar. The outcome will be the identification of the role of culture in the creation of benefits for farmers and the better understanding of resilience within the food chain system.
How stockbreeders transformed into agro-pastors by changing their systems to deal with drought and improving their living conditions.

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L’agriculture est un secteur d’activité privilégié pour notre objet qui est l’étude de la dynamique sociotechnique et du travail dans une visée du développement local et durable. Nous montrons dans cette étude comment des éleveurs transformés de plus en plus en agro-pasteurs à la suite de la sécheresse et la surcharge des hommes et du cheptel sur les ressources naturelles des parcours collectifs, sont amenés à changer progressivement leurs systèmes de production et partant leurs rapports sociaux dans une visée d’amélioration de leurs conditions de vie. En se sédentarisant, les agriculteurs intègrent d’autres mécanismes d’apprentissage et de nouvelles formes de connaissances autant dans leur rapports à l’espace, qu’au sur le plan de la production et des stratégies de commercialisation.

Au-delà d’une vision figée et homogénéisante de la paysannerie véhiculée par certains modèles sociologiques et par la vulgarisation agricole au Maroc, nous mettons l’accent sur l’hétérogénéité de la paysannerie et les aspects dynamiques de l’activité agricole et de ses acteurs.

Bien que les éleveurs/agriculteurs évoluent dans un environnement physique et économique souvent défavorable à leurs activités, ils manifestent de différentes stratégies pour améliorer leurs conditions de vie ou renforcer leurs acquis. En se basant sur cette dynamique socioéconomique nous montrerons comment l’intervention étatique et des organismes nationaux et internationaux peut susciter et accompagner des projets de développement locaux en respectant l’équilibre de l’écosystème.

A partir d’une étude sur le terrain rurale de la Commune de Ben Smim, au moyen Atlas berbère marocain, ayant mobilisé différents instruments de recueil d’informations, nous avons relevé que l’activité agricole n’est pas simplement une activité de production mais aussi de repositionnement des acteurs dans le système social. L’ethnique, le social, l’économique et le politique se mêlent dans l’orientation des rapports de production. C’est pourquoi il est difficile d’isoler une pratique agricole des autres pratiques qui lui sont intimement liées et qui peuvent concerner d’autres domaines de vie des agriculteurs. Une approche globale et dynamique des acteurs et de leurs activités est nécessaire pour développer l’économie locale et partant améliorer la situation sociale et économique des hommes et des femmes actifs dans le domaine agricole.

Il faudra envisager le développement local durable en liaison avec les orientations générales de la stratégie du développement agricole et rural au Maroc et les orientations des organismes internationaux pour diminuer la pauvreté dans les pays du sud et assurer l’équité entre les hommes et les femmes.

Innovative practices and Challenges of learning and experience sharing processes in Farming Systems - an Indian experience.
Ashok Alur roopashreyas@yahoo.co.in et al.

This paper will highlight the experiences of SDC-IC projects focusing on farming systems, livelihoods and poverty alleviation.

Building Agricultural Innovation System; Capacity to address Food and Nutrition Security and Poverty,
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One of the recent paradigm shifts in Research for Development is embracing the notion of Agricultural Innovation Systems Perspective. Views will be drawn from experienced practitioners from Sub-Saharan Africa, Asia, Latin America, and the CGIAR system to share their experiences, lessons as well as the challenges

Innovative methodology for assessing impact of farming systems groups (FSGs) in rural communities, Australia
Stephanie Andreata, Mark Fenton and Stephen Kelly

Showcasing the conceptual framework developed to explore impacts based on physical, economic, human and social capital utilising innovative methodology, followed by a debate to examine global learning opportunities, symposium colleagues’ experience in assessing impact in the broader rural communities context, and any likely limitations.

Photographs Turning into Photographers: Information and Communication Tecnologies (ICT’s) for the generation of local knowledge in the context of ecological small farmers’ agriculture, of the AGRECOL Andes Foundation of Cochabamba, Bolivia.
Orlando Arratia orlando@agrecolandes.org

Visualizes the process of farmers, women and men, learning how to document and diffuse their own ecological practices. Event will include photographs and texts.

Empowering Small Farmers Through Capacity Building of Government Service Providers: Lessons from Short-Term Projects in the Pacific Island Countries
Heiko Bammann Heiko.Bammann@web.de et al.

Two-year Technical Cooperation Projects (TCPs) funded by FAO have, in recent years, been used in a number of Pacific Island Countries (PICs) to promote the use of participatory farming system type approaches by governmental agricultural advisory services (i.e., research and extension). These have had the ultimate objective of helping small farmers achieve sustainable livelihoods. Experiences with such projects are described and evaluated and, on the basis of these, an attempt is made to provide suggestions as to how best to implement such types of projects in the future, given the realities existing in the PICs. Consideration will be given to the institutional setting, types of “external” support required, and the levels at which to base the instructional and extension material for use not only in training sessions but also in interaction with farmers.

La décentralisation a conduit à un conflit de compétence entre les acteurs de gestion des ressources forestières au Mali-Sud.
M’Piè Bengaly Mpie.Bengaly@ier.ml et al.
Dans un contexte de la décentralisation au Mali, une étude portant sur la situation actuelle de la gestion des ressources forestières dans la région de Sikasso, a révélé un conflit de compétence entre le conseil communal, le service des eaux et forêts et les exploitants forestiers. Pour lever ce blocage, les résultats ont montré qu’un cadre fonctionnel de concertation entre ces acteurs était nécessaire, sans quoi l’aggravation de la dégradation des ressources forestières qui en résulte va entraîner de graves conséquences pour la région.

**Enabling Rural Innovation for Sustainable Household Food Security in Millet-based farming systems in West Africa:**
A. Berthe abou.berthe@ier.m et al.

The paper concerns a successful collaborative and participatory action-research which enables farmers’ research groups for improving the food security of millet-based livelihoods through on-farm development and diffusion of integrated plant nutrient management technologies in rural communities.

**Village Extension Workers-farmer-to-farmer learning and organisation in the villages of Papua New Guinea**
Lilly Be'Soer fpdcgoroka@global.net.pg, et al.

This paper, which could be a presentation to a round table/panel, is on the Village Extension Worker project, an extension delivery mechanism of the government organisation Fresh Produce Development Company in Papua New Guinea. The project, initiated in 1999, aims through a network of village-based model farmers to provide producers in the villages with the technical skills, information and confidence they need to make a viable income from their fresh produce. There are currently 60 Village Extension Workers in five provinces in PNG, with over 55% of these being women.

**Customers First, Production Second: Training Farmers to Move Beyond the "Big Pumpkin Fallacy" to Customer Sovereignty.**
Robert V. Bishop betterfarms@palaunet.com

Much research, extension and individual farmers’ effort are devoted to growing produce which will not be sold due to insufficient customers or lack of customers. Training farmers to produce and provide services based on customers' identified wants/needs will result in improve livelihoods if accompanied by enabling training in farm management, marketing, and post-harvest handling including value adding. Lessons learned, training approaches, training materials and tools will be shared. Palau is a newly emerging small island nation in the Northern Pacific Basin with a small resource base.

**Discovery-based learning on land and water management: a practical field guide for FFS facilitators.**
Arnoud Braun arnoud.braun@planet.nl and Sally Bunning

This Field Guide, which is a set of experiential learning facilitator and training modules on land and water management for FFS, was produced for use and adaptation by government and project partners for improving land and water management by smallholder farmers.
Scaling-up and institutionalisation of community-based experiential learning and empowerment – mechanisms and strategies (including Global FFS Network and Resource Center)
Arnoud Braun arnoud.braun@planet.nl et al.

The FFS approach now exists in over 30 countries around the world, encouraging farmer learning in very diverse areas. Increasingly other organisations than FAO are implementing FFS, all of which require information in order not to re-invent the wheel during implementation. A need for a network, resource center and forum is of mutual learning interest to all involved stakeholders

Participatory processes in the development of livestock farming systems of Northern Ghana
J. Bruce jpbruce@africaonline.com.gh et al.

The paper chronicles the progress, problems and triumphs of researchers and farmers in a participatory process of livestock development spanning 10 years

Indigenous Learning and Knowledge Transfer Systems among the People of the Upper West Region of Ghana
Joy Bruce jpbruce@africaonline.com.gh and Naaminong Karbo

With the increasingly precarious environmental and food security situation of much of the undeveloped world, including Ghana, the ability of farmers to be informed about and make use of information and technology is important. This paper describes the extension efforts of formal extension services, be they governmental or NGO based and describes in some detail the indigenous learning and knowledge transfer systems of the peoples of the Upper West Region of Ghana.

The paper concludes by suggesting a possible ‘door-of-hope’ created through the opportunities provided by indigenous learning systems.

Aiding farmer decision-making in transition to integrated farming systems in small watersheds in northeast Thailand through a multiagent systems (MAS) model.
John S. Caldwell caldwelj@jircas.affrc.go.jp et al.

A multiagent systems (MAS) model is being developed with farmers to aid decision-making in transition to integrated systems from rice-sugarcane systems in small watersheds through cattle intensification as a starting basis for investment in ponds, fruit, and vegetables

Enhancing Learning Processes through Participatory On-farm Research: Experiences of the Lao-Swedish Upland Agriculture and Forestry Research Program (LSUAFRP)
Blesilda M. Calub arscalub@yahoo.com , et al.

The Farming Systems Research/Extension component of the LSUAFRP uses participatory on-farm research methods to develop technologies and recommendation domains based on indigenous and new knowledge that improves the sustainability and productivity of existing upland farming systems in Northern provinces of Lao PDR. Simultaneously, on-the-job training is provided to Lao staff to strengthen their capacity to undertake participatory
research and extension with Northern Lao upland ethnic farmers. Experiences and lessons learned over three years of implementation is presented.

**Improving Farmers’ Knowledge Support Systems in Myanmar.**
Khin Mar Cho Khin.M.Cho@agrar.uni-giessen.de and Hermann Boland

The agricultural knowledge and information systems in Myanmar, farmers’ perceptions concerning sustainable agricultural development, farmers’ perceptions towards participatory extension organization development, needs of institutional linkages and coordination program, farmers’ knowledge support system, monitoring and evaluation program, education and training will be discussed.

**Decision Support System (DSS) tool for Small Farm Livelihood Systems,**
Christopher Comstock Christopher.J.Comstock@nasa.gov

My program/tool transforms linear programming (LP) techniques used by small farm livelihood analysts directly into a Decision Support System (DSS): a user-friendly, graphical interface. This DSS, integrating Microsoft Excel and its Solver Add-in with Visual Basic programming, processes the LP methodology "behind the scenes" so the analysts can concentrate on the details of the farm. The level of understanding of an LP and the use of MS Excel and the Solver is minimized.

**Land, water and forest resources degradation in Ethiopia: Major causes, development attempts and future deliberations**
Getinet Desalegn getnet74@yahoo.com et al.

Ethiopia is facing challenges to properly manage natural resources and improve the livelihood of its citizens. It is therefore important to revisit resources management and utilization endeavours so as to correct failures and upscale successes.

**Experimentation of Management Advice for Family Farms (MAFF) process in North Cameroon, a framework of mutual learning for extension agent and farmers**
Patrice DJAMEN NANA djamenana@yahoo.fr and Michel HAVARD

The Management Advice for Family Farms process implemented in North Cameroon can be defined as an assistance for decision making during a learning process which progressively improve both farmer’ behaviour and extension agents’ working approach.

**In Search of Excellence: Exemplary Forest Management In Asia And The Pacific – Lessons For Agroforestry**
Patrick Durst patrick.durst@fao.org

The Asia-Pacific Forestry Commission (APFC) launched the *In Search of Excellence: Exemplary Forest Management In Asia and the Pacific* initiative in November 2001. The objective of the initiative was to identify and document specific examples of continuous improvement in the management of forest areas in the Asia-Pacific region.

*In Search of Excellence* received more than 170 nominations from 20 countries. Thirty nominations were identified for in-depth case studies to assess experiences with regard to innovative management experiences, characterizing a full range of management objectives,
and representative of a broad range of countries in the region. The initiative was supported by FAO and the Regional Community Forestry Training Center (RECOFTC) collaborated in supporting the initiative, in cooperation with APFC member countries.

It is suggested that a 3 hour mini-seminar on the agroforestry aspects of the In Search of Excellence initiative could be convened as part of the Farming Systems and Poverty: Making a difference. A Global Learning Opportunity symposium. The mini-seminar would review the initiative and share findings with respect to elements and factors constituting excellence in agroforestry. Four case studies would be presented to illustrate concrete examples of innovative and progressive management practices and approaches. Participants will have the opportunity to examine the elements of agroforestry management that contribute to, or constitute, “excellence in agroforest management”, to discuss their own experiences with such best management practices, and to consider opportunities for broader application.

**Changing relationship between farmers and service providers**, Deborah Duveskog [DDuveskog@faonairobi.or.ke](mailto:DDuveskog@faonairobi.or.ke)

Based on experience in Farmer Field School activities in Kenya the proposed sessions will focus on how attitudes, self-identity and power balance among resource-poor farmers and service providers change as farmers are empowered to take on more responsibilities of extension (in demand-driven services), and how these changes impact on the relationship between farmers’ and extension service providers?

**SARD Initiative Livestock Working Group: Partnering for Improved Benefits of Livestock-centered Development**

Linda Elswick [lelswick@hsihsus.org](mailto:lelswick@hsihsus.org), Sue Bertrand and Constance Neely

The Sustainable Agriculture and Rural Development (SARD) Initiative is a multistakeholder platform bringing together governments, intergovernmental organizations (FAO, IFAD, ILO) and nine Major Groups in society identified as essential partners in development by governments at the Earth Summit in 1992. The Livestock Working Group (LWG) is a partnership mechanism to promote multi Major Group/CSO, government and intergovernmental collaboration to share information, coordinate activities and facilitate linking of local lessons learned with policymakers at national, regional and international level. It will function as a network of stakeholders working to raise the visibility of and attention to livestock-related programs and policies in SARD. Enhancing the capacity of rural communities to transition to and scale up good agricultural practice in livestock and wildlife management will be explored and relevant experiences, good practices and policies to meet the Millenium Development Goals identified and articulated in policy arenas.

**Learning networks of NGOs and of governmental organizations - contrasting the experiences of FIDAMERICA and Grupo Chorlaví**

Germán Escobar [gescobar@rimisp.org](mailto:gescobar@rimisp.org) and Eduardo Ramírez

The presentation will describe and critically review the pre-conditions and potential of learning network when they are made up largely by NGOs (Grupo Chorlaví) and by governmental agencies (FIDAMERICA).

**A vision of the familiar agriculture from the farmers’ organization point of view in the northern Costa Rica**,
Guy Faure guy.faure@cirad.fr and David Meneses

Since 1990 farmers’ organizations in northern Costa Rica have launched different initiatives to strengthen their capacities. In 2003 they decided to formulate their own proposal of their familiar agriculture to face the challenges of the globalization and to negotiate more adequate supports from the public and private sector.

To address this goal, farmers’ organizations elaborated a participative process including different workshops with 15 farmers’ organizations to carry out a diagnosis and identify a global proposal, identification of think-tank with farmers’ representatives and technicians to synthesize the results, workshops with grass-root organizations to discuss the proposal and get a feedback, meetings with public institutions and farmers’ organizations at national level to present the proposal and generate a new dynamic, elaborations of projects to answer the short-term needs of some farmers’ organizations, etc.

In this process the farmers’ organizations define the different roles of the familiar agriculture: incomes generation, food production for families, employment creation in the rural area, natural resources management, community development, services providing to the whole society, etc. The proposal includes 11 components from farms strengthening programs to agricultural policies reforms. As a result farmers’ organizations strengthen their relationships between themselves, improve their self-esteem, change the point of view of the institutions on their capacity to propose new mechanisms to agricultural sector and get new supports from different stakeholders. But is it enough to contend with the strong globalization effects on the familiar agriculture?

**Developing a Decision Support System for the Economic Analysis of Smallholder Farming Systems in South Pacific Countries**

Euan Fleming et al.

The quality of farm management training and decision support systems for small farmers has declined in South Pacific countries and urgent remedial action is needed. It does not lie with the development of improved training materials, which are by and large adequate, although better training methods are needed to incorporate risk into decision making. We present recommendations for action through: more relevant and sustained training; enhanced institutional assistance and physical resources available for trainers and extension staff to do their jobs effectively; more enlightened use of techniques of economic analysis; and a more inclusive approach is adopted to support farmers’ decisions.

**Scaling up the impact of agroforestry: Lessons from three sites in Africa and Asia**

S. Franzel s.franzel@cgiar.org et al.

This paper assesses recent lessons learned from attempts to scale-up agroforestry improvements, drawing on three case studies: fodder shrubs in Kenya, improved tree fallows in Zambia and natural vegetative strips coupled with the Landcare movement in the Philippines. Currently more than 15,000 farmers use each of these innovations. Based on an examination of the main factors facilitating their spread, 10 key elements of scaling up are presented. These include: taking a farmer-centred research and extension approach; providing a range of technical options; building local institutional capacity; sharing knowledge and information; learning from successes and failures; and strategic partnerships and facilitation.
Three other elements are important for scaling up: marketing, germplasm production and distribution systems, and policy options, although the three case study projects had only a marginal reliance on these. As different as the strategies for scaling up are, they face similar challenges. Facilitators need to develop exit strategies, find ways to maintain bottom-up approaches as innovations spread, assess whether and how successful strategies can be adapted to different sites and countries, examine under which circumstances they should scale up innovations and under which circumstances they should scale up processes, and determine how the costs of scaling up may be reduced.

**Who in the community is passing on seed and information? Farmer to farmer dissemination of fodder shrubs in central Kenya**  
Steven Franzel s.franzel@cgiar.org, et al.

The adoption of new technologies has been widely studied but few assessments have been made of farmer-to-farmer dissemination, that is, who in a community disseminates new technologies and how they do it. The objective of this study was to find out the degree to which farmer groups and their members in central Kenya disseminate fodder shrubs, what types of planting material they disseminate (seed, seedlings, and wildings) and to whom. With formal extension systems in decline throughout Africa, such information can help policy makers understand the degree to which farmer-to-farmer dissemination can substitute for or complement formal extension services and how to promote it.

**Fishing systems characterization in a community of artisan fishermen in the south of Brazil: the case of São Lourenço do Sul city/RS (Brazil)**  
Vinicius Frizzo Pasquotto vinicius@pasquotto.com.br, Miguel and Lovois de Andrade

The aim of this paper is proposing a theoretical and conceptual approximation between artisan fishing and systemic approach. For that, it presupposes that artisan fishing is, like agriculture, an activity strongly influenced by social and natural complex dynamics. The adequacy of systemic instrumental to the artisan fishing study must overcome a series of limitations found not only in social and economical characterization level but also in the elaboration and execution of public policies for the artisan fishing.

**Scaling-up and institutionalisation of community-based experiential learning and empowerment – mechanisms and strategies**  
Kevin Gallagher, Arnoud Braun arnoud.braun@planet.nl, Cees Leeuwis Jim Woodhill and Guy Evers

Increasingly FFS approaches are being scaled-up and institutionalised at national level through million dollar projects. For such a scaling-up and institutionalisation to be successful important changes in implementation mechanisms and strategies are required during implementation.

**Transdisciplinary research, extension, and education: multistakeholder collaboration, organizational development and the emergent future.**  
Arthur Getz Arthur@igc.org, Constance Neely and Rainer Krell

This paper explores the concepts and experiences in which transdisciplinarity and holistic approaches to research, extension and education have been or might be applied to enhance stakeholder responsiveness and farmer-driven outcomes.
Resolving Rural Conflicts to Promote Prosperous Farming Systems,
Carl Jeffry Goebel  goebel@aboutlistening.com

I propose an open space workshop to demonstrate a method to successfully resolve rural issues, resulting in more prosperous farming systems. This experiential work has been used in numerous regions around the United States and Mali, West Africa. Currently, the author is implementing these concepts in central Oregon to foster social, economic and ecologically sound farming systems in a six-county region.

Factors contributing to communication fidelity,
M. Raisul Haider, Mymensingh and A Halim  dgbina11@bttb.net.bd

The purpose of this study was to have an understanding about the factors associated with communication fidelity in relation to modern rice production programme. Twenty-one independent variables were selected for study following Q-sort method. Data were collected from randomly selected 200 farmers residing in four unions of Gouripur upazila under Mymensingh district. Slightly more than half (52 percent) of the respondent had high communication fidelity compared to 39.5 and 8.5 percent having medium and low communication fidelity, respectively. A total of 46.43 percent area is covered by modern varieties of T. Aman rice. Remaining 53.57 percent land area covered by local cultivars. The most important reasons for cultivating local varieties of rice by the farmers were: high level of stagnant water due to moderately low land and poor drainage facilities in certain area, lack of adequate water due to high land in some other area, late transplanting due to occurrence of flood and less water holding capacity due to sandy soil. Pearson correlation test depicted that out of 21 variables, 15 had significant positive relationships, while one variable negatively related with the communication fidelity. Positively related fifteen variables were: communicators’ credibility, communicators’ knowledge level, communicators’ communication skill, suitability of messages, profitability of messages, understandability of messages, electronic media use, print media use, personal locality, receivers’ credit receipt, receivers’ innovativeness, receivers’ social participation, receivers’ education, receivers’ family education and receivers’ risk orientation. Negatively related variable was receivers’ family size. Results of stepwise multiple regression analysis revealed that seven variables contributed significantly to communication fidelity. These variables were: suitability of messages, profitability messages, receivers’ credit receipt, print media use, communicators’ credibility, electronic media use, and receivers’ family size. Out of these seven variables only receivers’ family size contributed negatively. Other six variables contributed positively to the communication fidelity. These seven variables combined contributed 53.7 percent of the total variation of communication fidelity.

Poverty alleviation in Uganda through farmer empowerment, informal adult education and demand driven advisory services
Esbern Friis Hansen  efh@diis.dk

The paper based on the fieldwork (300 hh questionnaires and qualitative interviews in Soroti district) from which I presented the preliminary results at the Neuchantel meeting November last year. It is intended for submission as an article. On the basis of a thorough well-being ranking (method developed at CIAT 1999), qualitative in-depth interviews and quantitative statistical analysis, the article show that two thirds of the members of FFS and NAADS groups have shifted from very-poor/poor to non-poor well-being status over a 4-5 years
period. It describes the most common pathways out of poverty and analyze the reasons for this success story in terms of (i) farmer learning based on informal adult education principles (in farmer field schools); (ii) farmers’ organisational and institutional empowerment (as members of FFS/NAADS groups/farmer associations/farmer fora); and (iii) changes in opportunity structures influence on content of extension and technology available (NAADS and NARO reforms).

Across the Divide: The Impact of Farmer-to-Farmer Linkages in the Absence of Extension Services
Tim Hart & Roberta Burgess THart@hsrc.ac.za

The literature on recent trends in agricultural development emphasises the importance of extension and research practitioners participating with smallholder farmers in order to improve agricultural development, providing various cases to illustrate this point. The same body of literature also provides examples of networks amongst smallholder farmers that make a crucial difference to local agricultural development by supporting smallholders. These networks are seemingly made up of more or less homogeneous resource poor individuals: sharing their skills, knowledge, inputs, etc. to ensure their ability to produce and to survive. However, in some instances the members of these networks are not homogeneous individuals, but often come from diverse backgrounds, having different access to various resources. During the Apartheid era in South Africa the state extension services predominantly focused on the large-scale commercial farmers and paid scant attention to the smallholder farmers in the various rural reserves. This paper, in the form of a case study, describes the context, initial linkage and relationship between two apple farmers, one a large-scale commercial producer and the other a smallholder, in the south-western cape deciduous fruit producing area. Despite Apartheid legislation and other socio-economic constraints this linkage and subsequent relationship allowed the smallholder to enter the national and the export apple markets during the 1970s and to continue to supply to these markets until today, despite most of his contemporaries having ceased their apple production by the 1970s. This was largely achieved by the farmer’s ability to use the subsequent relationship to enable him to innovate his production practices within the confines of his political and socio-economic circumstances. This case provides three clear conclusions that must be noted by those involved in agricultural development (1) relationships between farmers are important for their livelihoods, (2) farmers are innovators, whose innovations are constrained by the parameters of the context within which they are actors and not by their ability to innovate, and (3) where extension and research services do exist, they should seriously consider strengthening farmers’ networks and innovations.

Local knowledge and agricultural development: considering multiple dimensions
Tim Hart THart@hsrc.ac.za

This paper presentation considers why research and extension agencies should focus on local knowledge and local innovations when supporting farmers in Africa. Through the use of examples it explains this point and also points out why such a focus cannot concentrate exclusively on the technical aspects of local knowledge. Socio-cultural factors play and important role in local knowledge. For support to be successful attention needs to be given to the socio-cultural dimension. To ignore this is to the detriment of all involved in the development process.
A Tool to Facilitate the Learning Process by Small Farmers: An Experience Using Illustration-Based Educational Materials in El Salvador, Central America
Marta M. Hartmann MMHARTMANN@ifas.ufl.edu et al.

Evaluation of educational materials based on illustrations to facilitate the learning process by small farmers with a low level of education. Accounting for socio-cultural differences to develop audience oriented educational materials to improve comprehension.

Culture and Communication, Considerations for Effective Service Delivery: Using Participatory Communication Approaches for Understanding Farmers’ Realities.
Marta M. Hartmann MMHARTMANN@ifas.ufl.edu et al.

Understanding and validating farmers’ cultural orientations and preferred communication styles is essential for effective service delivery. These considerations are the background for the conceptual model of participatory communication advanced in this paper.

Utilizing small scale farmers as teachers to build rural entrepreneurism and increase family income
Michael Hogan hoganl@postoffice.ag.ohio-state.edu

This poster will demonstrate how small scale farmers in a rural Appalachian region of Ohio are teaching other farm families who operate small farms, how to develop alternative agricultural enterprises in order to increase family income. This group of farmers (20 men and women) have developed the largest small farm educational program in the USA to accomplish their goals. The poster will give ideas on how other rural communities can identify and train farmers to serve as mentors to farm families in their communities who wish to develop alternative agricultural and natural resources-based enterprises as a tool to increase family income and reduce poverty.

Multifunctionality, Stakeholder participation, R & D, Policy making – what has Learning got to with these?
Bernard Hubert hubert@avignon.inra.fr

The proposal begins from the premise that the development of new modes of collaborative adaptive management among farmers, scientists, consumers and stakeholders in the rural world relies also on the society’s organisational capacities to carry out R&D. In the recent past, the development of the agricultures of industrialised countries has benefited from strong public and private backing to support the continuous productivity gains, which have characterised western agriculture. Agricultural research has played a prominent role in this. But the situation has now changed. No real consensus has been reached on the role of agricultures in European countries, and the funding of public R&D is under question in an increasing number of countries. This creates a situation of uncertainty about the models of development, which would be appropriate to meet the actual challenges that agriculture has to face. Meanwhile, it is clear that each country, according to its agricultural history and model of agricultural development faces this situation in various ways. Our point of view is that such a situation is in itself challenging the professionals and practitioners of R&D. It addresses new questions to social sciences research. Nevertheless the contours of this challenge and of these questions have yet to be adequately reflected and defined, and internalised within R&D and teaching. Therefore, our forum seeks to share experiences on the structure of the relationships among researchers and practitioners within situations of
learning and changes. The main research question that it addresses is: how to involve diverse stakeholders in meaningful conversations, so that they engage in new ways of learning to lead to actions and outcomes that move farming and related industries toward a multi-functional agriculture.

**Multi-stakeholder processes for systemic learning, research and change in complex systems**

Christine King christine.king@uq.edu.au

This paper presents 6 case studies of multi-stakeholder learning groups which have been facilitated to create systemic change within institutions, industries and rural communities. Case studies include (i) PAR with farmers and scientists in India, (ii) Adaptive Management with rice farmers in Cambodia, (iii) Social Learning with practitioners in Tara, (iv) Multi-stakeholder research in the Pork Industry, (v) Multi-stakeholder learning with conservation, consumer and industry groups for Environmental Certification, and (vi) Participatory Conference Development with farming systems stakeholders for the 1st Australian Farming Systems Conference in Australia. Conclusions about facilitating multi-stakeholder learning with diverse groups with competing interests, across institutional/organisational

**Lessons learned on people-centred development**

Siobhan Kelly Siobhan.Kelly@fao.org et al.

The Livelihood Support Programme has conducted regional workshops in Latin America, the Caribbean, West Africa, Southern Africa and the Pacific. These integrated round table, tools bazaar and poster sessions will synthesise what is now working and what is not working based on the experience of field practitioners, and examine the implications for capacity building foci and methods. The tools bazaar will show selected training tools and kits.

**Tapping on local knowledge in natural resource management to improve livelihoods and heal landscapes in pastoral and agro-pastoral communities: lessons from eastern Africa.**

Aichi Kitalyi A.Kitalyi@cgiar.org and Gerson Nyadzi ginyadzi@yahoo.com

Revival of “Ngiti” a traditional practice, which involve conservation of fallow and rangelands by encouraging vegetation regeneration in Shinyanga Tanzania, reawaken development workers and researchers to importance of local knowledge in natural resource management. In subsequent development and discussions on scaling-up it was realized that this traditional practice is common among most pastoral and agro-pastoral communities. There is “Lehwe” among the Gogo of Tanzania, ‘Olalili” among the Maasai in Tanzania, “Amare/Ekwa” among the Turkana of Kenya, “Deso” in Afar Ethiopia and “Kelo” among the Borana. What is needed is recognition of the value of this local knowledge, combine it with science and technology to improve livelihoods and heal landscapes. The “Ngiti” case also underscored the importance of customary social institutions in instilling good stewardship of natural resources in communal tenure systems.

**Holistic institutionalization of trans-disciplinary activities for rural livelihood development**

Rainer Krell Rainer.Krell@fao.org

Results will be presented of a workshop analyzing the potential and requirements of holistic collaboration at institutional levels for sustainable agriculture development in a rural livelihood context. Institutions need to develop special capacities and certain structural
adjustments to be able to create real, dynamic, long-term synergies through collaboration and communication, which are a necessity for sustainability in today’s market, sociological, political and knowledge conditions

**Beyond subsistence farming: Educating the farmers simple principles of economics**
Sanjay Kumar sanjay@ivri.up.nic.in et al.

The development of marginal and small farmers has stagnated at subsistence level due to lack of economic rational amidst the limited options available to them in the developing countries. Educating them simple economic principles may lead to changed attitude towards commercial activity.

**Unicampo : A peasant University for the Nordeste of Brasil**
Fernanda Leal and Emilie Coudel

In the Nordeste, the poorest of Brasil, the major peasant union (CONTAG) and a federal university (Universidade Federal de Campina Grande) have initiated together a pilot project: a peasant university. Based on the exchange between local peasant knowledge and scientific knowledge, its objective is to stimulate the capacities of community leaders to implement their own development projects. Through a problematisation methodology, taken from the pedagogue Paulo Freire, the participants rediscover their own identity and culture. We will present the importance of the collective action in conditioning the learning process, and will discuss the possibilities of starting new similar experiences.

**Organizing peer-to-peer learning among farmer groups and service providers that are separated by large distances**
Clive Lightfoot clive.lightfoot@linkinglearners.net

Many development initiatives use participatory action learning processes as the principle mechanism to empower local people and ensure the achievement of their objectives. How to organize local people for learning, sustain learning after external resources cease, enhance communication between local groups, and how to get new ideas into local debate are questions that challenge the managers and beneficiaries of such development initiatives. This round table will collect ideas and experiences of those who participate on issues such as: the organization and running of a learning exchange network; the use of the internet to enhance the learning of groups that are separated by large distances; the new opportunities for rural business that emerge from operating learning exchange networks; and the codes of conduct and patterns of behaviour needed to sustain peer-to-peer learning networks.

**On-farm participatory learning processes in a community based activity experiences in Laguna and Palawan, Philippines**
Maria Cristina B. Lorenzo mcblorenzo@hotmail.com

This paper would like to narrate the author’s experiences in the conduct of participatory technology development in Laguna and the adoptive collaborative management (ACM) in Palawan, Philippines. Any actual on-farm activity participated by farmers, women and other marginal groups in the community is an opportunity for learning. The challenges for the development or extension worker lies on sustaining the processes that maintains the participation of an individual or group and at the same time enhance the skills and development until they reach the stage of self-sustainance. Various innovative activities such
as innovators workshop, multi-stakeholder/participatory monitoring system (self-based and group monitoring) seemed complicated but effective if properly done/conducted

A non-learning huge effort
Catherine Macombe catherine.macombe@cemagref.fr

No more place for the paternalistic client-orientation of rural development during the 1970-1980s. But, actually, we would like to know how rural people learn and share experiences. With the case of a smallholder farmers community from middle-mountain area in France, we may analyse an on-going learning process for four years. This research concerns a farmers group which is trying to make and to sell local cheeses.

In the first stage, farmers took over a stiff formula for setting what they wanted to achieve, without previously getting a clear schedule of actual context.

In a second stage, they dealt to be unable to learn anything new (from visits they did or from studies they have ordered) which would be in contradiction with formula. We can show gap between questions, which have generated exploration (e.g. ordered studies) and answers given by knowledge exploitation (e.g. what they concluded about studies issues).

In a third stage, smallholder farmers decided to face reality, by full-size testing cheeses’ sale at supermarkets. After this experience, they had to revise their original formula.

Here we propose tool in two steps. In first time, it allows us to locate the genuine formula. In second time, it allows us to demonstrate the gap between knowledge exploration and actual learning events, within a group. Then, we can use this tool, with a participation approach, to improve group reflexivity about its own learning, before full-size testing.

The method focuses on decision-making and helps to discover in what the group is able to do really (in given context) to achieve its goals. On the other hand, this paper questions public subsidies’ liberality towards farmer’s organizations. These subsidies supply money for disorganized successive studies which are quite unexploited by the principals. Instead of such liberality, we suggest an assistance to lead a real “consensus building” approach, among the project participants.

Building leadership capacity for sustainable rural development
Robin Marsh rmarshal@nature.berkeley.edu

There is a huge literature on “leadership” but not much of it has been applied to the field of rural and agricultural development. I hope we can make a good effort to do this at IFSA in 2005. We would explore investment in leadership as a means for promoting sustainable social change at individual, organizational and systemic levels. Look at the models and the experiences. We would invite Gillean Martin-Mehers, head of training at LEAD International, a key person from ASHOKA (social entrepreneurship), and perhaps a leader from Equator Initiative or winner of the Goldman Environmental Prize. I could speak about our Environmental Leadership Program at UC Berkeley and lessons learned after five years. This dovetails with the 2005-2014 UN Decade for Education in Sustainable Development, and I know someone we might invite from UNESCO

Sharing knowledge in sustainable agriculture : the example of the Sustainable Agriculture Farm Network in Midi-pyrénées, France.
Bernard Mondy bernard.mondy@educagri.fr and Agnès Terrieux,
The authors will offer a testimony of a research combining farmers, farmers organizations and researchers about the way farmers build references in sustainability. How they share those references and practices among themselves, with extension workers, teachers of agricultural vocational schools (the purpose here is to induce new curricula), and researchers, in a bottom-up process of knowledge producing. The testimony could as well be a poster or a presentation in a round-table or workshop.

**Social Networks Shaping Integrated Pest Management Knowledge and Practice**  
Keith M. Moore  keithm@vt.edu

Conventional technology transfer is based on the assumption of autonomous individuals independently making behavioral decisions. In contrast, the idea of “social networks” is that people and technologies are interconnected in ways that reinforce and reproduce some types of knowledge and behavioral practices and not others. Research from West Africa demonstrates that farm level decisions are shaped off farm by type of network integration. Evidence from Farmer Field School experiences in South East Asia are re-interpreted in light of the diversity of the social networks shaping Integrated Pest Management (IPM) decision making. Findings from social network analysis in Ukraine are also explored. The paper concludes that social networks are not monolithic and, furthermore, that there is competition between network segments for control of appropriate IPM knowledge and practice. The paper recommends further research is needed to determine how knowledge of social networks can contribute to improved technology transfer programs.

**Field Experience: field experience as a master trainer in the Farmers Field School(FFS) approach as adapted to the Kenyan situation from its origin in Asia.**  
A.M.Mweri  benjamin.mweri@wur.nl, mweribam@yahoo.com

I was one of the five Kenyans trained in the FFS approach in the Philippines and then helped introduce the concept in Kenya by training facilitators, to date there are over 1500 "schools" in 23 districts in Kenya...the notion of its spread as a "bushfire" my research for Msc thesis. Have worked with the Coast Development Authority (CDA) in the position of Agricultural head and as the FFS regional Coordinator and FAO consultant in the FFS in Kenya until my study in Wageningen. Currently I am in Wageningen University finalizing my thesis conducted in Kenyan coast of which I intend to share part of the out come as a paper for the workshop: Farmer Field schools in Kenya: 'A bushfire in perspective” A case of livelihoods and participation by smallholder farmers in coastal Kenya. Looking forward to your response

**Adaptive Collaborative Management (ACM) in Practice: Lessons from Mafungautsi Forest Reserve in Zimbabwe**  
Nontokozo Nemarundwe  n.nemarundwe@cgiar.org et al.

The past two decades have seen the emergence and emphasis on people-centred approaches in developing countries as a means of enhancing sustainable use and management of natural resources. In the forestry sector, recent management initiatives have emphasized active participation of local people, including in the management of reserved/state forests. However, many attempts have been unsuccessful because little attention was paid to processes that facilitate conscious and joint learning processes. In response to the lack of success of some initiatives aimed at fostering community participation in forest management, the adaptive collaborative management (ACM) research project was initiated in Zimbabwe in 1999. The
The aim of this project was to add value to a joint forest management scheme that was in place around Mafungautsi Forest reserve between the Forestry Commission and local communities. The goal of introducing the ACM approach in this case was to facilitate reform of management practices, institutional arrangements and policies in order to promote sustainable forest management systems and practices for both human and ecological benefit. The adaptive collaborative management (ACM) approach enhances social learning in forest management through collaborative action, monitoring and reflection processes. This paper explores the contribution that ACM has made in Mafungautsi state forest in north western Zimbabwe towards improving forest management within a context characterised by multiple stakeholders with conflicting interests. The Mafungautsi case shows that facilitating community participation in state forest management requires careful planning and facilitation of negotiations related to shared goals, approaches for forest management, sharing of information and the development of platforms in which social learning takes place. The paper concludes that ACM processes can contribute substantially to improving forest management in multiple stakeholder landscapes if sufficient attention is paid to the creation and use of appropriate reflection and learning platforms.

**Farmers begin to invent water saving cultivation in northeast Thailand.**
Masato Oda seven@affrc.go.jp, et al.

A method of farmer-researcher partnership was developed which stimulated a farmers’ group to respond to a researcher innovation that reduced dry season water use to 5 mm per crop by inventing themselves cheaper, environmentally-friendly technologies in companion plots.

**From Reductionism to Farmer Innovation systems: Implications for multi-stakeholder collaborative learning and client–orientation in Uganda.**
Chris Opondo c.opondo@cgiar.org, et al.

Research strategies have tended to be overtly commodity focused when promoting agricultural development as has been evident in the strategies of Green Revolution. These strategies have limited impacts on the intended beneficiaries as the complexity of their livelihood systems is ignored. The African Highlands Initiative (an ecoregional program), the NGO, Environmental Alert and the National agriculture Research organization (NARO) in Uganda have championed research approaches to research and development (R&D) that are intended to address broadly the components of the existing farming systems using participatory approaches (such as use of integrated and multidisciplinary teams, promotion of participatory research and farmer- led innovations processes, multi-institutional collaboration for synergistic partnerships). The above mentioned organization are striving to change the mindsets of those with whom they work, while emphasizing a new focus on broader impacts of new innovation processes including a critical assessment of the actors involved the R&D partnerships and how they learn from activities they engage in, as well as an orientation to impact by tracking and document changes that accrue in the process. This paper illustrates that the transition to promoting local innovation systems requires a total change in mindsets and in strategies for conducting formal research. The research has to be an integral part of the development process and not just for the sake of generating new knowledge per se.

Moreover, it has to involve, with multiple stakeholders on account of the systemic nature of the diverse components that farmers are faced with. The competencies of farmers, and other R&D actors needs strengthening as new approaches such as action- research processes for equitable targeting and inclusion and sharing of benefits as brought on board. The papers
draws insights crucial for embracing innovation systems, multi-stakeholder collaboration partnerships based on experiences gained in R&D initiatives in Uganda.

**Strategies beyond peer-to-peer knowing and learning for cocoa quality improvement in PNG**

Jane Ravusiro  s4071645@student.uq.edu.au and Christine King

Earlier case studies showed efforts to address the increasing quality issues of cocoa produced in Papua New Guinea by smallholder farmers in particular led to considerable research and releases of new post-harvest technologies over the last decade. However, current trends have indicated that cocoa quality issues still exist and have been reflected in the increasing complaints by end users and the decrease in premium paid which has often affected smallholder farmers. This has presented opportunities to revisit previous learning approaches and the relationship between researchers and farmers in addressing quality and smallholder cocoa farming systems. This paper will present work in progress on strategies developed to strengthen entrepreneurial capacity for peer-to-peer knowing and learning. Given the time and resources spent previously on learning which was ToT oriented, peer-to-peer knowing and learning may not be enough therefore, the strategies will aim to address learning between institutes and smallholder cocoa farmers as well as challenging how different stakeholders can learn and work in addressing quality.

**Incentives are not enough”**: Could knowledge gaps vis-a-vis natural resource management be constraining rural livelihoods?

Jules R. Siedenburg  jules.siedenburg@linacre.ox.ac.uk

Given the juxtaposition of widespread natural resource ‘mining’ with limited farmer adoption of seemingly advantageous ‘sustainable agriculture’ practices, several authoritative authors have recently identified adoption of such practices as the pivotal issue facing agriculture in ‘low potential’ areas. Typically, constraints to adoption are framed in terms of the incentives facing farmers, such that given existing resource and institutional constraints failure to adopt is seen as privately optimal. By contrast, the paper reports on recent doctoral research examining the possibility that the local knowledge informing farmer’s management of natural resources could be problematic under certain circumstances, causing farmers to neglect emerging opportunities and threats.

**The evolution of a participatory learning approach for agricultural nutrient management in the northeastern United States**

Walter Smith  walter.smith@ct.usda.gov et al.

Three projects relying on a participatory research and learning approach for agricultural nutrient management have evolved into a program entitled Farmer Research Groups. Within this setting, problem identification, research development and solution implementation are managed as a participatory process, led by farmer groups with technical assistance from the research and technical communities. The overall objective is to overcome technical hurdles associated with on-farm change in the management of agricultural nutrients, but the program has evolved as it has become evident the technical hurdles are not as great as the social hurdles to obtaining behavior change related to conservation implementation.

**Supporting Farmer Innovations: “Bridging the Gap between Scientific Theory and the Diverse Farming Practices of Smallholders”**
Willem A. Stoop and Tim Hart

Agriculture, in both industrialised and developing countries, is a unique sector, characterised by complex issues and problems, ranging from macro-economic policy levels to the micro farming-household and field-plot levels. This paper suggests how research aimed at development could deal with agro-ecological and socio-economic diversity at field level and could help to bridge the gap between scientific theory developed by policymakers and scientists, and the practical realities of smallholders.

The paper concludes that to handle diverse and complex, location specific problems inherent in development, sustainability and poverty alleviation issues, require that national research and development (R&D) institutions be strengthened and adopt comprehensive, people-centred approaches. Such approaches would seek first to mobilise local communities and their indigenous or local knowledge, as well as local farmer-to-farmer communication systems. Such strengthening will depend critically on: 1) the (university) training of a young generation of scientists, 2) the leadership and management of agricultural research and development institutions, and 3) the continuity of (financial) support that these institutions receive from national governments and other donors.

**Forming a farmer experimental group to develop technology for integrated farming in rainfed northeast Thailand.**

Uchada Sukchan [Uchada.au@yahoo.com](mailto:Uchada.au@yahoo.com) et al.

We describe a process begun from 2003 in which farmers and researchers have jointly identified needs, established a common research agenda, formed a farmer experimental group, and carry out on-farm research on integrated farming for vegetables, fruit, livestock, and rice.

I will appreciate your consideration of this submission. Please let me know if you have any questions. I will look forward to your reply on March 31, and hope that I may have the opportunity to share our results with the global community of farming systems and participatory research professionals, practitioners, and stakeholders.
Agro-Advisory Services based on Medium-range weather forecasting in the new alluvial zone of West Bengal, India
Saon Banerjee and S. A. Khan  sbaner2000@yahoo.com

In the era of global warming and climate change, erratic rainfall-pattern poses a threat to the farmers of any rain-fed farming region as the water-requirement is concerned. Again, during transplanting of rice, the diurnal range of temperature plays a crucial role. Wind speed governs the pesticide spraying schedule. Hence, there is an ever-increasing demand for accurate weather forecasting to the farming community. Since 1994, the demand is fulfilled in the New Alluvial zone of West Bengal, India through the establishment of weather based agro-advisory services by National Centre for Medium Range Weather Forecasting (NCMRWF), Dept. of Science & Technology, Government of India. The main objective of the centre is to publish and disseminate the agro-advisory bulletins prepared on the basis of weather forecasting and current weather situation.

The main achievement of the centre is that the farmers of the nearer locality participate in weekly meetings where they get necessary advices on adjustment of different cultural practice according to weather forecast. Feed-back survey is carried out each year to evaluate how much the agro-advisory are utilized by the farmers. Study carried out from 2000 to 2004 revealed that about 12.9% of the farmers rated the weather based agro-advisory service as excellent, 67.7% as good and very good, 9.7% as satisfactory and rest did not answer. The farmers utilize rainfall forecast from different mass media sources, mainly radio, apart from the bulletin published by the agro-advisory service unit. All farmers under survey agreed that the bulletin is too much useful for planning their field operations like sowing, transplanting, irrigation, spraying of pesticides, fertilizer application etc.

Difference as a resource for sustainable agricultural development: Responding to the globalisation of modern agriculture by supporting local agrobiodiversity
Douglas K. Bardsley bardsley.douglas@saugov.sa.gov.au

The dominant modernisation approach to agricultural development fails to sufficiently value the diversity that exists within social and ecological systems because of the need to maximise short-term goals of profitability and productivity. While there are substantial advantages inherent with the increasing interconnectedness and mutual responsibility associated with globalisation, it is vital that an inability of the modernisation approach to incorporate the diversity of societies is recognised. An alternative evolving Human Ecology paradigm, which focuses on the multifunctional values of agriculture, including the inherent value of difference between and within agricultural systems, provides a framework by which economic development could go hand in hand with social and ecological sustainability.

Bonnes pratiques de formation pour un projet de développement rural : L’exemple du Projet Emploi Rural en Algérie
Omar Benbekhti, omarb72@hotmail.com
Cet article est basé sur une pratique algérienne de mise en œuvre d’un projet utilisant les techniques et les outils de l’approche participative. C’est le résultat de plusieurs années d’encadrement et de formation des personnels de différentes administrations du ministère de l’agriculture, en particulier l’administration des forêts, et des membres d’associations. Il présente une synthèse des acquis, des méthodes utilisées, des résultats obtenus ainsi que des insuffisances et des bonnes pratiques pour l’amélioration des projets à venir conformes à la réalité de ces terroirs. Seront présentées et analysées les différentes activités et leurs résultats, ainsi que les principales difficultés rencontrées sur le terrain par les formateurs et les agents de développement dans la mise en œuvre des outils de la méthode. Enfin nous conclurerons sur les conditions nécessaires à la réussite d’une telle approche et les adaptations requises au niveau institutionnel pour l’harmonisation des stratégies d’intervention en milieu rural et la création des meilleurs cadres de concertation avec les partenaires.

La plasticulture itinérante dans les Ziban (Algérie)
M. Bennoui Foudil, fbennoui@yahoo.fr

Le maraîchage et la phoeniciculture connaissent essor important dans la région des Ziban. La volonté des pouvoirs publics, à travers les différents plans de développement de l’agriculture saharienne, en plus de la disponibilité des eaux souterraines et l’accumulation d’un savoir-faire local expliquent cette expansion. On rencontre, dans cette région, les dynamiques agricoles les plus grandes, caractérisées par l’extension des périmètres phoenicicoles et l'introduction de nouveaux systèmes de production, cultures légumières sous abri et de plein champs en plus de l’arboriculture fruitière. Par ailleurs, l'environnement socioéconomique de la production empêche sa valorisation optimale, notamment la transformation et la distribution. La désorganisation des marchés locaux privent les agriculteurs de restituer leur marge au profit d’une multitude de commerçants intermédiaires. L’écoulement de cette production dans les marchés extérieurs pose des problèmes liés à l’organisation, à la stratégie des producteurs et aux conditions d’accès. Les plasticulteurs, de cette région aride, sont mal connues, leur stratégie de production et de pénétration du marché doivent constituer l’élément clé pour la mise au point d’une politique de développement durable répondant au préoccupations locales et au respect de l’environnement.

Plan de développement pastoral participatif en Tunisie centrale
Rhym BenZid, bz.rym@planet.tn

Cette communication aura pour objet les résultats d’une étude réalisée dans une petite zone en Tunisie centrale. Les objectifs de cette étude étaient d’une part, d’établir un diagnostic de la situation agricole de la zone et d’autre part, d’élaborer un plan de développement participatif à partir des résultats du diagnostic. Un profil historique de la zone a été réalisé pour mieux comprendre la situation actuelle de l’agriculture. Dans le passé, l’activité principale était le pastoralisme. Au fil du temps et sous l’effet d’éléments divers, les systèmes pastoraux ont évolué vers des systèmes d’agriculture associée à des élevages ovin et caprin. Compte tenu des ressources fourragères limitées dans la zone et du fait de la dégradation de la nappe alfatière, le plan de développement pastoral participatif, tel que cité dans les termes de référence de l’étude, devait apporter des solutions pour le maintien de l’activité pastorale. Compte tenu de la réalité du terrain, un plan de développement participatif basé sur des actions agricoles a été, en définitive, préconisé.
Identifying strategic development pathways for African agriculture
Prem Bindraban Prem.Bindraban@wur.nl et al.

Any agricultural production system that could be pursued for the development of sub-Saharan Africa should target the millions of small and resource poor farmers to ensure widespread development, while it should comply with international standards and developments in agriculture. The understanding of the evolution in agriculture in the developed world that results from external and internal forces is valuable for identifying strategic agricultural development pathways for Africa. The complex and diverse African agriculture may appear to be an asset instead of a constraint to comply with these local and international demands.

Co-existence between Genetically Modified, conventional and organic crops
Birte Boelt, Birte.Boelt@agrsci.dk & Lise C. Deleuran,

With the rapid introduction of genetically modified crops special attention should be given to farming systems that use local varieties from possible gene flow. The supply of pure traditional seed for organic agriculture, as well as farm-raised seed, is of specific concerns.

Animal Feeds For Smallholder Farms In Southern Laos
Bounphavanh Kanyavong and Arsenio D. Calub, arscalub@yahoo.com

The Agricultural Development Project, IDA Credit 3509 LA, is a four-year irrigation rehabilitation cum-livelihood enhancement and poverty alleviation activity in four southern provinces of the Lao P.D.R. The project involves 21 irrigation schemes ranging from 30 to 2,000 ha for a total 7,000 ha directly benefitting around 10,000 households and material assistance to 5,000 poor families. Participatory Rural Appraisal and informal feed inventory priorititized promotion of feed production on-farm and in home gardens: for non-ruminants-food cum-feed crops, in descending order: yellow corn, cowpea, pigeon pea, sweet potato, cassava, and coconut; for ruminants- Leucaena and/or Gliricidia plus sugarcane forage.

A sustainable innovative yield booster in rice farming system in North Western zone of Tamil Nadu, India
M.N.Budhar, mnbudhar@rediffmail.com et al.

System of rice Intensification (SRI) or single seedling method of rice cultivation could address solutions in increasing productivity and efficiency in rice farming system in North Western zone of Tamil Nadu, India. SRI conducted in 100 farmers holdings could reveal the enhanced yield potentiality by changed management practices by “learning by doing” by farmers with innovative attributes like less seed rate, less water, and less area for nursery. Concrete and visible status differences were seen in terms of higher yield, increased income, more water saving, enhanced soil fertility with improved fertilizer use efficiency at micro level. At macro level enhanced standard of living and food security maintained with sustainable livelihood in the adopted areas. Thus, SRI could act as yield booster coupled or compatible with agro ecological system of North Western zone to empower the subsistence rice farmers with enhanced socio economic status. SRI-a sustainable innovative yield booster in rice farming system in North Western zone of Tamil Nadu, India
Sustainable Development of Arid Lands Through Appropriate and Innovative Farming Systems and Rational Use of Water Resources

Dr. Ismail H. El-Bagouri, ena@enameknes.ac.ma

Adopting Appropriate and innovative farming systems designed to secure the rational and optimum use of the available soil and water resources with varied qualities and conditions would provide the badly needed scenarios for the small farmers that could secure sustainable development of resource base with optimal socio-economic returns and minimal environmental hazards.

Rôle de l'accès aux ressources naturelles communes dans la réduction de la pauvreté; Cas des parcours collectifs au Moyen Atlas, Maroc

Lahssan Bekkari, ibekkari@yahoo.fr

Dans la région du Moyen Atlas (Maroc), les ressources naturelles communes ont souvent offert aux différentes familles une source de revenu non négligeable. À un moment d’abondance relative de ressources pastorales, des familles venant du Sud du pays trouvaient refuge dans une cette région hospitalière. A travers un long processus de changement (croissance démographique, mise en culture de terres collectives…), ces ressources sont devenues de plus en plus rares. Les parcours, placés sous tutelle de l’État, font l’objet de processus d’appropriations individuelles qui menace leur durabilité. En disposant de moyens propres pour abreuver le bétail, les gros éleveurs s’approprient les meilleurs parcours ; inaccessibles pour les petits troupeaux qui sont ainsi repoussés vers les marges. Aussi, les petits éleveurs sont contraints de recourir à d’autres ressources pour subvenir aux besoins de leurs familles. Les ayants droit sans élevage se voient interdits par les gros éleveurs, de recourir à des associations d’élevage avec des « étrangers ». Ainsi, on tentera, à travers cette communication, sur la base de l’étude de dynamiques de systèmes de production (réalisée dans un village de Moyen Atlas), de monter les différentes stratégies développées par les paysans pour faire face à un milieu de plus en plus contraignant, en relation spécialement avec l’utilisation de ressources naturelles. On intégrera aussi le cas des paysans sans terre. Sur la base de l’étude des perceptions locales d’une gestion durable des parcours chez différentes catégories d’acteur, on tentera de montrer différentes façons de concevoir des alternatives chez la population locale. Ces perceptions sont à mettre en parallèle avec la conception établie du développement pastoral dans le but de comparer les différentes logiques en présence. On essayera enfin de montrer, qu’en l’absence d’une approche globale de la question des ressources naturelles qui intégrerait l’ensemble des logiques en présence, il serait difficile de concevoir un développement équitable des zones de montagne. En effet, le développement pastoral ne peut être réduit à un projet d’aménagement visant l’augmentation de ressources fourragères produites par unité de surface. La gestion durable ne passeraient-elle pas par une réappropriation collective et dynamique de la ressource. Pour cela, il est peut être temps de concevoir des projets de développement qui prennent en compte les différentes catégories d’acteurs locaux pour un développement plus équitable qui réduirait les inégalités sociales. Ainsi, les ressources communes peuvent offrir une chance pour une vie meilleure pour les plus démunis de la société.
Harnessing the Power of Partnerships in the Marketplace: Using a Learning Alliance for Agro-enterprise Integration into Agricultural Recovery

Rupert Best (Rupert.Best@fao.org), Tom Remington, Shaun Ferris and Mark Lundy

CIAT and CRS have developed a long term Learning Alliance, based on the concepts of market engagement to meet the needs of rural households living in extreme poverty, that is transforming how both institutions work. Through this process CRS has shifted from a supply side approach to disaster recovery, with an emphasis on food security based sustainable production, to the application of a market orientation. This new approach is being applied at the outset of recovery interventions; leading to better profiling of rural households and the identification of appropriate market opportunities and focused agro-enterprise support. Disaster affected producers are linked to markets, in a process that strengthens their agro-enterprise capacity, increases smallholder income and resilience to future shocks. The result has been an evolutionary process of co-innovation and mutual learning between CIAT and CRS, which connects research with development and provides a bridge between disaster recovery and development.

Livelihood diversification and other strategies to improve food security, income, diet and health and local capacity of vulnerable populations in Uganda.

Lorna Michael Butler lmbutler@iastate.edu et al.

The poster describes the evolution of Iowa State University’s Sustainable Rural Livelihoods Program and the sustainable livelihoods (SL) concept, describing how the multi-dimensional SL approach is used to guide processes for partner identification, program planning and implementation, and monitoring and evaluation. The SRL program, initiated in Uganda in 2003, partners with a national NGO and an established university to engage local farmers and leaders in technology adaptation, capacity strengthening workshops, farmer-to-farmer training, and other participatory activities aimed at livelihood diversification.

Precision Agriculture; Best Alternative Approach for Sustainable Agricultural Development

Amir Hossain Chowdhury, iedsfoeb@accesstel.net

Information management and its use in practical decision making at the farm level will be the foundation for sustainable agriculture in the new millennium. Precision agriculture provides a sustainable agricultural system that allows farmers to use resources efficiently and develop and maintain complete input and output records. It is a knowledge-based technological management system capable of optimizing farm profit and minimizing agriculture’s impact on the environment. To establish the technology of precision agriculture as a common practice, there is need to develop transferable guidelines and principles for decision making in crop management. This requires both attentions to the specificity of crop production (i.e. crop rotation) of the field. High economic efficiency and ecological benefits are ensured now a days only by integrated crop production techniques. Precision agriculture can significantly increase economic and also ecological efficiency of crop management. So, steps must be immediately taken to introduce precision agriculture in Bangladesh.

Corn-livestock integrated farming system in selected corn growing areas in the philippines.

Dr. Cayetano C. Pomares, arcdp@philonline.com
The utilization of corn for poultry and ruminants has been explored thoroughly in corn farmers field in Guitawan, Arakan valley, North Cotabato and Alamada, North Cotabato. The technology resulted to the upgrading and market potentials of Kabir and native chicken as added income to corn growers at the time that their corn is still not harvested.

The biotechnology of utilizing corn as soilage and silage as feed for goats, sheep and cattle on feedlot has resulted to the improvement of the average daily weight gain of the animals and has increased the market potential of the stock. Corn growers in the same token, increased the market value of the grain corn growers since price for grain corn is never stable. The whole corn plant is marketable at steady price and has shorter wait until harvest. Thus, the livestock and corn growers has increased their income.

The generation of these technologies resulted to the adoption of beneficiaries of the Department of Land Reform (DLR) under the livelihood project as Agrarian Reform Communities Development Project (ARCDP2) in answer to their mandate to raise household incomes and the quality of life of the project beneficiaries by improving their productive assets, rural infrastructure and their access to key support service. One of this support services is a biotechnology on small ruminants on breeding and genetics as artificial insemination which would develop the genetic potentials of their goats as source of breeders, meat and milk. The project is now implemented by the Dole Agrarian Reforms Beneficiaries Cooperative Incorporated at Project 70, Tupi, South Cotabato; ARC Batanes Province with the Ivatans; ARC Misamis Occidental and outside the DLR, Municipality of Naujan, Oriental Mindoro with the Mangyans; and Lupa, romblon, Romblon.

Small livestock for landless and small farmers: Improving farmers’ lives through improved goat production practices in India
Mahesh Chander mahesh64@email.com & H.P.S.Arya,

Goat production offers a good opportunity for poorest of poor in rural India, who have very limited options for livelihood. An action research experience of working with goat keepers in 6 villages of Northern India has been discussed.

Smooth Transitions from Relief to Reconstruction and Sustainable Agriculture
Maja Clausen, maja.clausen@fao.org and others

The overwhelming response to the tsunami disaster brings into question the dynamics, coordination and linkage of activities. These can be looked at from a household and community livelihoods perspective, and also from the perspective of higher level stakeholders.

Land, water and forest resources degradation in Ethiopia: Major causes, development attempts and future deliberations
Getinet Desalegn, getnet74@yahoo.com et al.

Ethiopia is facing challenges to properly manage natural resources and improve the livelihood of its citizens. It is therefore important to revisit resources management and utilization endeavors so as to correct failures and upscale successes.
Presentation (English or French): Tool of Scheduling in Projects aiming at promoting sustainable intensification of a big ladder Agriculture, by: Bougouna SOGOBA, Agronomist

The results of five (5) years of experience between the African Division of the IFDC and its partners for the project 'Embedded Management of the soil Fertility (GIFS) in seven (7) countries in West Africa, the technical note below indicates logical settings of the first two stages of a three stages project cycle. It has to be himself a scheduling tool to follow-up and assessment of the programs aiming at promoting a sustainable intensification of Agriculture in the areas strategically chosen. The logical settings are conceived in order to suit the mutual training between actors and ‘facilitators’ organizations. This training concerns the technical aspects (options of fertility management), institutional and economic ones (reinforcing farmers’ organizations and other actors, fertilizers supplying, agricultural products sellers, credits and saving structures, agricultural policies). It is mainly based on two training cycles, called DATE/R for Research - Action and DATE/E for participative vulgarization (NB. DATE = Diagnosis, Action Planning, Trying out, Assessment, /R = Research, /E = Extension). The Settings include only objectives, required results (at short and long terms) and indicators - activities depend on specific circumstances of every area the collected results. The settings permit to lead to the collection, the analysis and the data interpretation viewing to inform the different implicated parts. The formulated indicators have the privilege to be simple, measurable with a doorsteps quantification wished to reach to the foreseen results regarding the factor steps in the time. They also take into account the level of involvement and the degree of understanding of various actors.

New potato planting technique with rice straw mulching under no-tillage in rice–potato cropping system
Zhu Defeng, zhudf@mail.hz.zj.cn et al.

Potato seeds are put on the raised bed of rice field under no-tillage after the harvest of rice. One application of fertilizer or organic manure is practiced and bed is mulched with rice straw. Weeds will be controlled with rice straw. At harvest season, 25 to 30 t/ha of potato can be collected taking out the decayed straw. That is easy, labor-saving, sustainable and high-yielding potato planting technique suitable for small household in rice growing area.

To fight against the hunger and poverty by the agropastoral: contributed to the development in DRC: Case of the cultures around the Field and Hunting preserve of Bombo Lumene in Kinshasa,
Dr. Pierre Boyzibu Ekhassa, ekhassa@yahoo.fr

The DRC is potentially rich in natural resources, but without food safety. Poverty and the hunger are accentuated by the diseases and are at the base of the daily fight for the survival of the populations. To improve the operating system of these resources: it is to reduce poverty and to contribute to the economic development and the protection of biodiversity

The plantation of acacias as source of returned for the local population around BOMBO LUMENE’s protected areas in Kinshasa
Pierre Boyzibu Ekhassa ekhassa@yahoo.fr

In Kinshasa, more than 90% of the population uses the charcoal and the firewood for cooking and in the factories of transformations. The cuts of wood are carried out in the some forest galleries around Bombo Lumene’s protected areas which are at the same time soils for fields of several food crops. Whereas the exploitation of the natural resources out of peripherals of
the surfaces protected in Democratic Republic of Congo, does not occur without ecological impacts on fauna and the flora. With Bombo Lumene’s protected areas, in the bordering village soils of the forest classified of this one demographic growth, poverty, the search for ember and firewood, the bad management of the natural courses and lack of water point; contributed enormously to the destruction of this forest ecosystem which still shelters some animal species. The surrounding population prefers more and more to occupy the forest galleries for field and work for the perennial cultures. This is why, the safeguarding of the forest ecosystems in the surfaces protected in DRC implies the integral participation of the local communities to prevent that those can be given to their destruction and consequently contribute to their own poverty.

The plantation of acacias around Bombo Lumene areas allows:

- to protect the vegetation from this Field,
- to increase the financial incomes of this population by the production of and charcoal firewood,
- to make perennial cultures,
- to fight against the turning into a desert,
- to shelter certain animal species,
- to decrease the human pressure on the destruction of fauna and the flora.

This forest of acacia became a true factor of development for this local population.

To rationalize the exploitation of this forest, is: to promote the development of this population and at the same time and to fight against poverty.

Using ethnographic linear programming to assess natural resource management alternatives among smallholders in the Western Amazon

Maria DiGiano, mdigiano@ufl.edu

My research utilizes ethnographic linear programming (ELP) to model and understand extractivist and colonist livelihood systems in the Western Amazon. ELP models are used to project various natural resource management scenarios and assess their potential differentiated impacts on income generation and forest cover for diverse households. Preliminary results show that the viability of natural resource management alternatives is differentiated among households within the same livelihood system.

Butterfly Farming: A Sustainable Micro-Enterprise Model for Biodiversity Conservation

Thomas C. Emmel, tcemmel@flmnh.ufl.edu et al;

Butterfly farming and ranching provides a community-based enterprise model to directly link natural resource conservation and rural economic development through the sustainable utilization of available biodiversity. Resulting ventures can directly enhance individual and community earning potential, diversity local tourist opportunities, catalyze environmental educational initiatives, and stimulate positive attitudinal paradigm changes. The current global market for living or papered butterfly material substantially exceeds 200 million U.S. dollars annually.
Multi-use landscapes in the U.S.: Developing new synergisms between wildlands and farmlands,
Tara Pisani Gareau, tarapg@ucsc.edu et al.

Historically, agricultural production goals and wildlife habitat conservation have been highly polarized, with 'clean farming' as a dominant preventative approach to pest management and 'human exclusion' as the dominant approach towards conserving ecologically sensitive lands. Results of this polarization have been the continued reduction of wildlands and associated biodiversity, reduction in ecological services necessary for agricultural productivity, and overall tension between environmentalists and farmers over land ownership and use. An emerging trend in the U.S., in which farmers, conservation organizations and extension agencies are forging partnerships to conjointly restore and conserve natural vegetation at landscape scales may provide a framework for resolving these ecological and social issues. We investigate the role of US agri-environmental policy, specifically the implementation of conservation and agricultural easements, in facilitating these new partnerships and ecological outcomes.

Fortalecimiento del Programme de desarrollo de las Montanas Cubanas
Ramon Gonzalez

This presentation describes the experience from an FAO supported project to enhance the service provision of a multidisciplinary extension programme serving the mountain areas of Cuba. Content will focus on the underlying process of extension, and the coordination and partnerships of the various extension government and non government agencies. extract: Por lo que se acordo reforzar en los extensionistas actuales y en su trabajo cotidiano el concepto de"dialogo horizontal" y el "intercambio de saberes". por lo que "proceso" implica el acompanamiento de los productores por parte del facilitador en la evolucion de la aproppiacion tecnologia a partir de su propia experiencia y de esta forma ir avanzado el empoderamiento de su propia capacidad. Es importante senalar que el facilitador en este proceso de acompanamiento crece al ir aprendiendo la otra parte del conocimmetino no academico

Participatory on-farm trials and demonstrations in support of improved food security and agriculture productivity – experiences and lessons from the South Pacific Island Region
Dr Danny Hunter, and Heiko Bammann, Heiko.Bamman@fao.org

The paper summarizes experiences made in the implementation of participatory farming systems type projects in the South Pacific island region over the past years. The authors will compare two different implementation models used: a region wide (regional) project and a series of nationally implemented projects. Small farmers are the focus of both approaches and the work is implemented through national (government) advisory services, with an aim to closely collaborate with non-state actors. The paper will make an attempt to describe what works, what does not work, why it does not work and what could be done to be more efficient and effective in supporting small farmers agriculture in island countries.
Assessing the potential impacts of environmental service payments on household income and land use among smallholders in Brazil's western Amazon
Maria DiGiano mdigiano@ufl.edu

The potential impacts of environmental service payments programs on smallholder livelihood strategies are understudied to date. With recent attention and funding directed to such initiatives, ethnographic linear programming models provide a tool by which potential impacts may be projected and studied. This study examined the potential impacts of Proambiente, recent payments for environmental services (PES) initiative in the Brazilian Amazon. Proambiente seeks conserve forests and alleviate poverty by providing incentives to rural producers, through environmental service payments, technical assistance and credit, to maintain or adopt sustainable resource management practices. The complexity of Proambiente’s objectives and the socio-economic, environmental and cultural diversity of the Amazon require research tools to attain a keen understanding of the livelihood systems of rural producers and to project and compare potential impacts on poverty and forests. The study used ELP models to project 5 scenarios, including a “business as usual” scenario and different policy scenarios in order to compare their impacts on forest cover, pasture and incomes over a ten year time horizon. For the scenario in which smallholders received environmental service payments for maintaining forest cover as mandated by federal regulations, the results generated by the models showed that payments improved smallholder income; however, they did not slow deforestation rates and in fact provided capital for further investment in cattle ranching. When payments were linked directly to the implementation of agroforestry systems, incomes increased, deforestation slowed and cattle production decreased. Research showed that PES programs in the Brazilian Amazon may have the potential to both conserve forests and alleviate poverty when payments act as incentives to adopt specific natural resource management practices and are packaged with appropriate technical assistance.

The changing land use system on Vertisols in Kenya: challenges and opportunities,
E.C. Ikitoo et al. scienceprep@yahoo.co

Vertisols, the heavy clay soils found mainly in semi-arid areas of Kenya are traditionally used for extensive livestock grazing but with increasing human population and emigration of people from humid to semi-arid areas, they are now increasingly being used for arable cropping. Due to difficult physical properties, they pause severe tillage and other management problems. This is a challenge to researchers but could be a great opportunity to improve production. The paper will review some of these aspects and present date on improved management technologies.

Improving rural livelihoods through efficient on farm water and soil fertility management (in Tanzania)
Andrew K.Kabanza, kkaggwa@yahoo.co.uk

Under rainfed agricultural systems, enhanced water productivity is possible through improvements in water and soil fertility management, agronomic practices (eg conservation tillage) and use of improved genotypes of food-feed crops. In most of the semi-arid tropics of Africa and Asia, the nexus of water and feed limitation is the primary constraint to effective crop and livestock production. There is a need through integrated and participatory multidisciplinary research to identify constraints of agricultural production and disseminate
low-cost farming technologies that can improve water productivity to benefit smallholder farmers.

**Potentials of tree domestication to improve carbon sequestration and farmer livelihoods in smallholder production systems of the humid forest zone of the Congo basin.**

J. Kanmegne, J.kanmegne@cgiar.org et al.

A strategic integration of valuable indigenous fruit and medicinal tree species in land uses along the slash-and-burn chronosequence, and the development of market opportunities for tree products at local, regional and international levels, can significantly reduce land degradation, and reduce poverty in rural areas of the humid tropics.

**Building a Sustainable Community Food System in Seattle and King County, Washington, USA: Developing a Local Food Policy Council**

Sylvia Kantor Sylvia.Kantor@METROKC.GOV

A Seattle/King County food policy council will provide a role for city and county governments, in partnership with private sector (for- and non-profit) organizations, to play in decreasing food insecurity, improving health, and increasing the sustainability of the local farm and food system. Such a public-private partnership will undertake a comprehensive food system assessment in order to identify priority areas for developing policy and program recommendations, educating and engaging the public, leveraging resources for food system improvements, and strengthening linkages among food system components.

**Complexity in Farming systems, livelihood and Natural Resource Management, a case study in “Bazoft Watershed” in Iran**

Esmail Karami, e.karamidehkordi@reading.ac.uk Dehkordiand Chris Garforth

This paper is to discuss complexity aspects in natural resource management (NRM) by understanding nomadic and rural communities’ farming systems and livelihood and the intervention and policies on NRM. It is also to identify what kind of potential obstacles there may be for managing this complexity. For this purpose, a case study was used in Bazoft, one of the watersheds/catchments of Chaharmahal and Bakhtiari Province in Iran.

**Health Hazards Associated With Occupational Exposure To Pesticides**

Givi Katsitadze, ekotox@myoffice.ge

The process of economic and political transition in Georgia caused serve health and environmental problems. Especially it is concerned with the intensive using of pesticides. This point necessitates to prognosticate and evaluate occupational health hazards related to pesticides. Covered in this study are 42 farmers occupationally exposed to pesticides (organophosphorus, organochlorine, organomercurial, carbamate end other). Observations were made during spring and summer and included physical examination, the collection of urine samples, determination of serum cholinesterase activity and fetal hemoglobin (HbF) blood level. Farmers were subjected to a special questionnaire. The results of this study showed that about 45% of farmers had chronic intoxication symptoms and reproductive function disorders, the elevated HbF levels were found in 60% of the examined workers. The increased values of urine pesticides level were found in 20%. The inhibition of cholinesterase activity was not stated. This study offers a recommendation for the medical control of rural
population exposed to pesticides to designing medical measures for the prevention of pesticides poisoning.

**Le système vétiver: une solution pour préserver l'environnement Pourquoi le système vétiver?**
Fatima Koudy Sy, koudyk@yahoo.fr

Bien que le vétiver (vétiveria zizanioides) soit utilisé pour des besoins de protection de la terre depuis une cinquante d’années, son impact réel sur la conservation des sols et des eaux ne s'est vraiment fait ressentir que plus tard dans les années 80 grace à la campagne de promotion initiée par la Banque Mondiale. Le vétiver avait été initialement développé en vue d’assurer la conservation des sols et des eaux dans les terres agricoles. Bien que cette application joue toujours un role vital dans les terres agricoles, le vétiver, doté de ses caractéristiques morphologiques, physiologiques et écologiques uniques comprenant son degré de tolérance aux niveaux élevés de métaux lourds ainsi qu’aux mauvaises conditions climatiques, joue un role essentiel dans le domaine de la protection de l’environnement et de la réhabilitation des terres.

Le vétiver quel role et quel mode de fonctionnement? Le vétiver est un moyen très simple, pratique, peu cher, demandant très peu deentretien et très efficace, servant à la conservation des sols et des eaux, au controle des sédiments ainsi qu’à la stabilisation et à la réhabilitation des terres. De par sa nature végétale il ne détruit pas l’environnement.Plantés en rangées le long des contours, les plants de vétiver formeront une haie très efficace pouvant ralentir et épandre les eaux de ruissellement, reduire ainsi l’érosion des sols, conserver l’humidité du sol et retenir les sédiments sur place. Bien que n’importe quelle haie soit en mesure de faire cela le vétiver, pour des raisons liées à ses caractéristiques morphologiques et physiologiques uniques précédemment mentionnées, est capable de le faire mieux que tous les autres systèmes ayant été testés....

**The Power of Agroforestry and Multisectoral Partnership in Sustainable Upland Development: The Case of the "Agroforestry Support Program for Empowering Communities Towards Self-reliance (ASPECTS)" Project in the Philippines**
Leila D. Landicho, leila_landicho@yahoo.com

ASPECTS project, which was funded by the Ford Foundation, was pilot-tested in the three provinces of the Philippines aimed at developing a grassroots-oriented extension model that simultaneously addresses the objectives of community empowerment and the advancement of agroforestry education. This project harnessed the potentials of agriculture and forestry schools in empowering upland communities to enable them to extend agroforestry extension services to adjoining communities and other farmers for sustainable development. Lessons from the project implementation demonstrate the viability of multisectoral partnership in realizing a sustainable community-managed agroforestry extension services.

**Development of agroforestry farming systems based on coffee plantations in the Western Highlands of Cameroon.**
Ngome nee Tata Precillia Ijang, ijang2001@yahoo.fr et al.
Accessing the possibility of ameliorating the productivity from local coffee based farming systems through improved soil management techniques, farming systems, cropping systems, pest management, input application and increase yields within coffee plantations.

**Abandoned Pesticide Waste Sites in Georgia**
Dr. Manana Juruli, mjuruli@myoffice.ge

Uncontrolled waste sites, including waste storage and treatment facilities, former industrial and agricultural properties may produce health and environmental effects when chemicals released from these site. The potential impact on rural population health is most marked in developing countries. Such countries are not enabling to take appropriate measures for preventing accidents, treating victims, and aiding environmental recovery. The present paper extends the review of current information on environmental threats to human health of abandoned pesticide waste sites in Georgia and estimate position to organize work to decontaminate toxic pesticide waste and to prevent its negative impact on environment and human health.

**A congress on organic solutions for world farming**
Alberto Pipo Lernoud

IFOAM, the International Federation of Organic Agriculture Movements, organizes an Organic World Congress every three years. In September 2005, thousands of organic farmers and traders, governmental representatives and certification agencies gather in Adelaide, Australia, to discuss the main issues of ecological farming, a reality that is growing.

The world-wide organic markets have been growing steadily during the last fifteen years, reaching a volume that is over 30 billion dollars of annual turnover. The land under certification has also grown constantly for the last decade and a half, covering over twenty five million hectares. Australia, with more than eleven million hectares certified organic, the biggest surface in the worked, is an example of a powerful exporter of diversified products and an intense and booming internal market.

During the Organic World Congress the different areas of organic farming processing and marketing are analyzed by the persons involved. There is a Scientific Congress with presentations from researchers from dozens of countries, coming from universities, research centers, farming schools and farmers participatory research groups. There is also an intense exchange of marketing experiences, from the small local markets in the developing countries to the international export structures. Norms and regulations are also discussed, and governmental representatives and standards experts compare experiences and debate the possibilities for harmonization in a field of production that is becoming more significant for its social, environmental and economic virtues.

**Poverty reduction in hill farming systems of Nepal through more equitable access to local resources**
Maharjan, amina@psussmp.wlink.com.np et al.

The distribution of agriculture land in the densely populated hills of Nepal is highly inequitable and poverty is widespread. A novel approach for poverty reduction is being described which provides an opportunity for the most disadvantaged community members to gain access to community resources and income generating opportunities.
Effective Partnerships for Sustainable Rural Livelihoods: A Critical Review and Case Studies from Africa
Robert E. Mazur rmazur@iastate.edu and Lorna Michael Butler lmbutler@iastate.edu

The roles of multi-stakeholder alliances and partnerships in promoting sustainable rural livelihoods based on sustainable agriculture, natural resource management, income earning and capacity strengthening will be critically reviewed from both outcomes-based and social science perspectives. The primary focus is linkages among universities, inter-governmental and non-governmental organizations, and government agencies; the private sector’s role will be examined to the extent possible. Guidelines based on ‘lessons learned’ will be identified. Examples from Africa will be highlighted.

Use of Swot Analysis in Participatory Soil Conservation Planning For Smallholder Farming Systems: A Case Study,
Munyaradzi Manjoro manjorom@mailhost.buse.ac.zw et al.

The paper presents a case study conducted in rural Cuba on the use of SWOT analysis in soil conservation planning and particularly, in the promotion of participatory diagnosis of problems, potentials, priorities and context-specific technology development in small-holder semi-subsistence farming systems. Steps for the SWOT conducted and the results reached at on its use in soil conservation planning are presented. The study concluded that SWOT analysis can be a useful tool in getting better insight into the problems affecting smallholder farmers in the developing world and promoting participation in their solution and recommends that similar studies be done to test the usefulness of SWOT analyses in dealing with rural development and natural resource management challenges in the Third World.

Préservation Des Ressources Naturelles Et De L’environnement Par Une Valorisation Des Ressources Genetiques Du Rhizobium Autochtone De Quelques Legumineuses A Interet Pastoral Et Fourrager Des Zones Arides Et Semi Arides D’algerie,
K. Mekhtoub mekh_kahina@yahoo.fr

Les mutations ainsi que les changements survenus au niveau des zones semi-arides et arides à des situations complexes de dégradation des agro- systèmes principalement sous l’action anthropique. Le système Sol- Végétation- Atmosphère, sous l’influence conjuguée et répétitive des cycles climatiques et des activités humaines sur cet écosystème fragile dont la régulation n’est désormais plus assurée. L’azote, après l’eau est le facteurlimitant majeur de la productivité végétale dans ces agro- systèmes où la sur-exploitation des sols par la gestion intensive de ces milieux. L’agriculture moderne se trouve de ce fait de plus en plus tributaires de l’utilisation massive des engrais chimiques azotés. Ils présentent beaucoup d’inconvénients sur le plan économique par leurs coûts de production qui est de plus en plus onéreux et sur le plan environnemental par le lessivage dans les nappes phréatiques posant ainsi le problème de pollution et de santé publique. Les légumineuses fourragères établissent des symbioses fixatrices d’azote atmosphériques avec des bactéries du sol communément appelées Rhizobium. Cette symbiose Rhizobium- légumineuse présente une grande importance à la fois agro- économique (engrais biologiques, fourrages, rotations des cultures, alimentation humaine) et écologique (maintien des sols, réhabilitation d’écosystèmes dégradés). Elles constituent une importante source de fourrages dont les propriétés symbiotiques sont peu étudiées. Cette complexité et l’importance de cette problématique
imposent une nouvelle approche en recherche et développement durable pour la préservation des ressources naturelles de ces régions.

**Productivity enhancement and welfare gains on smallholdings in South Western Kenya: interaction between institutions, technology in transforming farming systems**

Lutta Muhammad [luttam2002@yahoo.com](mailto:luttam2002@yahoo.com) et al.

We analyze the role of micro-finance, KARI technologies and participation in community based organizations in increasing grain and milk production by 11 and 38 per cent respectively in South Western Kenya, a region bedeviled by poverty and disease and propose a way forward.

**Constraints and Challenges in the maize-based farming system in southern Africa: Experiences from Zambia and Mozambique**

Mulugetta Mekuria, [m.mekuria@cgiar.org](mailto:m.mekuria@cgiar.org) and Shephard Siziba

Maize-based farming systems dominate the agricultural systems of southern Africa. Efforts to improve the productivity and sustainability of the systems have been underway by both NARS and IARCs. A study by CIMMYT and its partners attempts to describe the system and understand "why farmers do what they do" in their maize based production systems and identify constraints, challenges for R&D

**A participatory approach to for salty soil reforestation in Senegal**

Babou Ndour [baboundour@yahoo.fr](mailto:baboundour@yahoo.fr)

In Senegal saline degrade lands cover about 500 km². This hostile ecosystem is particularly found along the Sine and Saloum rives located in the peanut basin. Since 1971 the Senegalese Institute for Agricultural Research through its forestry and Agroforestry programs has been testing local and exotic species for degraded land rehabilitation. In 1994 this the results of these investigations are used in a forest research development projects involving actively farmers are used to value this degraded ecosystem at a sylvo-pastoral point of view. Presently more than 100 hectares are reforested and local people with fodder, wood, medicinal material, etc. At the same time land degradation process is alleviated.

**Development Strategies, Pathways and Synergies investing in Sustainable diversified Agriculture for the Small Holder Vulnerable but Viable Farmers**

Drinah Banda Nyirenda

Lessons learned and best practices on providing a low cost input diversified starter pack for the vulnerable but viable farm households tilling one hectare or less is critical strategy in improving food and nutrition security and jump start them for entry into small scale entrepreneurship for rural development. In the last four years 2000 – 2004, the Government of the Republic of Zambia through Programme Against Malnutrition (PAM) has implemented the Food Security Pack Programme aimed at providing low cost inputs to the largest small holder group in the rural areas representing 80% (4.2 million of the 5.25 million) rural people. These are provided with a diversified crop package of improved cereal, legume and cassava/sweet potatoes with complimenting pack of yield enhancing technologies for soil conservation and improvement (liming, green manuring and good tillage practices) and water retention (basin making) in dry areas. The farmers are taught value adding processing and utilization technologies and cereal/seed bank management. The seed/cereal
banks at community level provide marketing points for surplus products. The programme can be sustainable if alternative livelihoods are provided under a low cost credit scheme that would make the households engage into complimentary all year round income generating activities. This model provides lessons and best practices that if funded well could lead to the achievement of the World Food Summit Declaration (1996) and Millennium Development Goals (MDG) on reducing hunger, improving food security and initiating agricultural growth and rural development in Zambia and many African countries. This paper elaborates the framework and methodology of assessing food security particularly of households farming in less favored environments. Food security is evaluated in three dimensions: food availability, food access and food adequacy. The analytical tools are applied using empirical data from formal surveys of 220 households, various informal interviews and 12 case studies in Leyte, Philippines during the period 2002-2004. As a whole, the paper articulates a useful analytical framework and tool feasible in development work.

**Evaluating the Success of Forest Conservation Efforts by Smallholder Cacao Producers in Southern Bahia, Brazil.**
Kathleen Painter, kpainter@ufl.edu and Dr. Robert Buscbacher

I will present a poster of my master’s research, carried out in conjunction with Jupará, a Brazilian agricultural development NGO. Jupará extensionists have worked with land reform communities in Southern Bahia since 1994 to teach agroecological methodologies and secure organic certification. Jupará set several specific goals for participating families, including organic certification and maintenance of 30% of the landholding in forest cover and 40% in diversified cacao agroforestry systems. My research will use household interviews and analysis of satellite imagery to assess the extent to which goals have been met by participating families.

**Revaluing the Social Domain: Using the ORCA model to understand how social factors determine farming systems in Trinidad.**
Kelly Payson kellyp@ufl.edu et al.

This paper argues that social factors (socio-economic, socio-cultural, and life-stage variables) are key determinants of farming systems and must be accounted for in any development strategies. The ORCA model is introduced as a tool for analyzing how social factors determine the objectives, resources, and constraints of individuals, thus affecting the nature and type of livelihood activities engaged in. Practical application of the model in Trinidad demonstrates how social recommendation domains were identified in two ethnically distinct farming communities.

**Building on synergies: Achieving joint production, conservation and livelihood outcomes at a landscape scale. The case for "ecoagriculture"**
Claire Rhodes crhodes@ecoagriculturepartners.org, et al.

It is often assumed that achieving productivity and conservation objectives necessitate serious trade-offs. However, strategies to enhance agricultural productivity and preserve biodiversity can be more than mutually compatible. Ecoagriculture is an umbrella term that embraces diverse land management practices that sustain rural livelihoods through productive and sustainable agriculture (crops, livestock, forests, fish) and also protect ecosystem functions effectively at a landscape scale. This session will have presentations that cover the basic
concepts and goals of ecoagriculture, successful field examples of ecoagriculture, capacity-building challenges for scaling-up ecoagriculture, and valuing ecoagriculture. Presenters, discussants and open discussion will debate processes for balancing trade-offs and the multiple objectives of different stakeholders, with respect to ecology, economic and productivity goals. The panel will include representatives from farming and community-organisations, an international conservation / rural development agency, the private sector, among others.

**Water Harvesting, to abridge the Food Gap, & Conservation of resource base**  
*In Western Sudan (Kordofan Region)*  
Osman Abdul Rahman Alfaadn et al.

Western Sudan depends to large extent upon small farmers to increase agricultural production to meet the nutritional requirements of a tenaciously increasing population. In abridging the food gap, water harvesting, proved to be promising. Constraints to mainstreaming of the technology that needs to be overcome by small farmers, revolve around variables associated with technological changes, institutional arrangements, and information needs. The paper deals with new technologies mainstreaming in western Sudan.

**Impacts of Fair Trade**  
Carl Philipp Riedel, Federico Manzano-Lopez, Amy Widdows, Alim Manji, Markus Schneider

The decline of commodity prices has had a dramatic impact on the lives of millions of small-scale producers in developing countries. The price index of commodities declined 47% between 1982 and 2001, and the real prices for key agricultural commodities are near a 30-year low (Vorley, 2003). Fair Trade (FT) seeks to address this problem by directly linking producers with consumers. Between 1997 and 2003, the general sales of fair trade products increased 221 percent (FLO). While the FT movement has grown substantially, with labelling initiatives in over 20 countries as of 2004, limited work has been done to study the effectiveness of the scheme. This literature review found the impacts of FT on different stakeholders to be varied. While impacts are tangible and generally favourable at the producer and producer organization level, they are more difficult to discern for other stakeholders (i.e. business, governments, EU, WTO).

**Focus on biodiversity, as this is in decline, and it affects all ecosystems including the human aspects of them such as human well-being and poverty, vulnerable systems and populations.**  
Janet Riley janet.riley@bbsrc.ac.uk

Use biodiversity to make such systems more sustainable and/or productive, for example, underpinning of the relationships between diversity and primary production, protection from pests and disease, and management of pollution; Manage systems to conserve useful or desirable biodiversity, for example, underpinning of the relationship between agricultural practices and the maintenance of desirable species or ecosystem services provided by biodiversity; Cultures differ for different people, tribes, and gender should be included at different scales, both spatial and temporal. Biodiversity is directly influenced by policies and governance, and multi-stakeholder partnerships such as C.S.O.s, inter-governmental
organizations, legal entities, governments, and the private sector, together with guidelines, regulations and investments. Uncertainty is a component of biodiversity and the data we measure. However there will be trade-offs, synergies, feedbacks, drivers both direct and indirect, pressures, states, impacts and responses at different spatial scales. There is a need for innovative institutions, and policy coherence and coordination at different levels, as well as the mainstreaming of ecosystems, ecosystem services, and human well-being related to decision making. Effective biodiversity response strategies have a bearing on human well-being in three ways:
1) They conserve a source of current and future goods and services;
2) They create synergies and trade-offs of biodiversity conservation with other needs of society, including sustainable use of biological resources.
3) Difficulties in measuring biodiversity make response design difficult, and complicate assessments of the impact of responses.

Les mutations récentes du système de production oasien dans la vallée de Oued-Righ (Algérie)
Benziouche Salaheddine sbenziouche@yahoo.fr

Depuis tout temps, les régions sahariennes constituent une source de richesse économique, de diversité naturelle et d’échanges sociaux. Examiner leur système de production s’est avéré nécessaire, car il a subit une large et profonde évolution des contraintes touchant ces différentes strates et principalement le premier étage, à savoir la phoeniciculture, qui est soumise à une dynamique provoquée par la mises en œuvre des différentes politiques depuis l’indépendance et jusqu’à nos jours. En effet, cette région se caractérise par un système de type oasien qui consiste en une association de trois strates végétales. De même, le microclimat qu’il offre est favorable à une polyculture vivrière, en plus d’un élevage caprin et ovin de type familial destiné, essentiellement, à l’autoconsommation et conduit d’une manière traditionnelle. Cependant, un regain d’intérêt pour ce secteur est enregistré durant les deux dernières décennies. L’agriculture a, de ce fait, évolué du point de vue structurel puisqu’on assiste à une relance qui s’exprime non seulement à travers l’extension des périmètres phoenicicoles mais aussi par le développement et la mutation des systèmes de production. Ainsi, le passage de la monoculture à la polyculture, la réalisation de grands canaux d’irrigation, l’extension de la plasticulture, l’amélioration des itinéraires techniques manifestent autant le renouveau de cette agriculture. Nous tenterons, ici, de répondre à certaines questions, à savoir : Quels sont les goulots d’étranglement qui entravent le développement de l’agriculture de cette région ? quelles sont, aussi, les retombées socio-économiques, techniques et environnementaux, sur cette même région, après la mise en œuvre du PNDA (Plan National de Développement de l’Agriculture) ? De savoir aussi, de quelle manière se concrétise la dynamique de ce système de production ?

From Pastoral to Sedentary Farming Systems: Making a Difference to Bedouin Communities in Northwest Coast, Egypt
Abdul Bari Salkini, a.salkini@cgiar.org et al.

Ecologically-balanced pastoral systems in the semi-desert region of the Northwest Coast of Egypt have been evolved into sedentary, more productive FS due to development activities implemented in the last few decades. However, settlement of the Bedouins, accompanied by changes in their aspirations and living style and standard, and random development endeavors have increased human and livestock pressures on an inherently poor and fragile resource base, engendering cyclic resource degradation and poverty. The paper presents the
impressing experience of Matrouh Resource Management Project (MRMP) established to tackle this problem. It focuses on analyzing the biophysical, socioeconomic, and institutional and policy factors that have influenced the evolution process of the FS. It also discusses the project components and methodologies, highlighting the participatory, multi-disciplinary, multi-institutional and community-based approaches employed by the project to introduce to the Bedouin community simple technologies for sustaining the resource base and for agricultural production improvement. Monitoring and evaluation of adoption and impact, and the technical and managerial lessons learned from the project were given a special emphasis in the paper.

**Understanding and Sharing of Successful Local Development Practices**
*Sara Savastano ssavastano@gmail.com*

The purpose of preparing cases on successful local development practice is to foster collaboration between civil-society, government and inter-governmental organizations for scaling up their impact and to identify conducive policies for such scaling up. The cases presented at the IFSA Global Learning Opportunity will be analyzed by the participants for their suitability for collaborative action and scaling up. Participants will also identify policy messages that promote the scaling up of successful development practices. These policy messages will be shared with governments at PRSP assessments and work-plans for national sustainable development councils, as well as at IGO & Civil Society regional consultations in the UN ECOSOC Commission on Sustainable Development.

**Systèmes de Production Agricole Durable et Lutte contre la Pauvreté: l’expérience de SYSPRO à Sébikotane**, Moussa Seck thierno_seck@hotmail.com, et al.

Les systèmes de production agricoles expérimentés au Sahel se sont jusqu’ici soldés par des échecs pour la plupart en ce sens que : non seulement ils n’arrivent pas à assurer l’autosuffisance alimentaire, mais aussi ils contribuent à la dégradation des ressources naturelles et de l’environnement en général. Le papier que nous allons vous soumettre montre l’expérience de SYSPRO dans la mise en œuvre de système de production agricole de « Troisième Génération » qui assure une synergie autour des trois conventions des Nations Unies à savoir la lutte contre la Désertification, la préservation de la Biodiversité et la lutte contre les Changements Climatiques tout en participant à la lutte contre la pauvreté.

**The Relationship between Agroforestry & Agroecology vis-a-vis the Development of Sustainable Landuse Systems**, Howard-Yana Shapiro, howard.shapiro@effem.com

A Collaboration Between Mars, Incorporated and The University of California, Davis There are four pillars of Sustainable Landuse: the reduction of poverty, the enhancement of livelihood's, the reduction of ecosystem degradation and the protection of biodiversity. Agroforestry and agroecology take opposite hierarchies of need to the solutions of Sustainable Landuse, the key between though is the use of trees and what they represent to the small stakeholder, as a subset there are four further subsets of sustainability that work on a national scale. Firstly, trees and the markets and their components of germplasm, products, processing and the market chain; secondarily, land and the people, the household farm system and the assembly of components together into systems; thirdly, environmental services, the landscape effects, of water shed management, soil degradation, biodiversity and climate
change; and fourthly, strengthening national institutions, the challenge of building capacity in research and development, social services, farmer organizations and extension services form the function of the four pillars and the four subsets the family tree portfolio is the answer, if we understand the components, the household farm system, the landscape effects and the challenges articulated above only then we will be able to meaningfully create a "Really Green Revolution" and sustainable landuse systems.

**Zero-Tillage: Another revolution in third world agriculture.**
A.P.Singh apalsingh@yahoo.com, A.L.Rathore, and G.K.Shrivastava

(1) Growing cost of agricultural production system is causing adverse effects on benefit:cost ratio of farming business and the consequences of all above resulted in poverty, exodus of farmers resulting in an increase of city slum.
(2) Definitions of sustainability that consider only one dimension i.e. soil fertility are insufficient, hence, ecological, social and economic dimensions must always be considered.
(3) Zero tillage or conservation tillage system has been considered towards the achievable three-dimensional sustainability in agriculture as it offers numerous advantages that conventional tillage system cannot match.

**A framework to support effective policy making on biodiversity - poverty relations in farming systems in developing countries.**
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On the basis of a conceptual framework (paper) and interactive dialogues with IFSA Farming System partners (open space workshop at GLO), insight and understanding on biodiversity-poverty mechanisms will result in developing more effective policies for simultaneous biodiversity conservation and poverty alleviation. Biodiversity-poverty mechanisms are interpreted as commonly occurring combinations of interlinked factors that together strongly affect biodiversity-poverty relations. It is assumed that the world-wide variety of biodiversity-poverty relations can be reduced and described by a limited number of typical mechanisms. These mechanisms cause negative impacts on biodiversity and/or poverty, but for each mechanism positive policy options or solution strategies will be proposed. For critical mechanisms the main risks and sensitivities can be described, so that insight in the mechanisms also has a certain predictive value.

**Farming systems (FS) approach to mitigating the effects of HIV/AIDS on rural livelihoods in southern Africa.**
Paul Thangata, Paul@Thangata.fsnet.co.uk et al.

The HIV/AIDS pandemic is a developmental issue affecting all sectors of rural livelihoods. An ELP model demonstrates how the FS framework is applied in the analysis of HIV/AIDS studies, focusing on food and nutritional security, land availability, gender and labour shortages.

**Agriculture and Rural Development Project in Cambodia with Scope for Human Security- Nurturing Self-reliant Rural Communities**
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Human security is a key issue when implementing agriculture and rural development projects in developing countries. The Kingdom of Cambodia has entered the development stage from
the reconstruction stage after one decade from the first free general election held in 1993. In
the last decade physical and social infrastructures have been improved and the security of the
country has been improved. However, we still observe many difficulties in the
implementation of development projects in rural areas. Some enjoy development while an
increasing number remain in poverty. Sometimes if not all the time, we have found in the
rural area that the gap between the wealthy and the poor has increased. Some negative
impacts on the reconstruction and development processes were created during the recovery
period. Most donors did not pay much attention to the negative impacts of rural development
projects because pro-poor projects were believed to bring only positive results.

Japan International Cooperation Agency (JICA) has an agricultural project in Battambang
that is in the north-west of the country 300km from Phnom Penh. The project, named
Battambang Agricultural Productivity Enhancement Project (BAPEP) started in April 2003
with a 3-year cooperation term, and this is the first project that JICA has implemented with a
provincial government in Cambodia. Four Japanese experts are assigned to work with PDA to
provide better technical services to farmers. This project focuses not only on agricultural
production but also on the rural community. The Activities in BAPEP show practical use of
the human security concept. The fundamental principle is to avoid the negative influences of
the development project implementation.

The experience of BAPEP shows that technical support based on the resources and potentials
in the area is critical for agriculture and rural development after the reconstruction stage. The
‘farmer to farmer’ approach is effective for easier adaptation of improved techniques with
technical support. Assurance of market is vital for stable production and quality
improvement. It is useful to involve existing local authorities for supporting and
strengthening farmer organization. Small farmer groups can coordinate in different activities
by interacting with each other and synergy can be expected. By combining these different
activities, the rural society can support different levels of farming and this leads to human
security in rural areas. It has also been observed that a network among government agencies,
donors, Non Governmental Organizations (NGOs) and farmer organizations is useful when
the local government has little power to take initiative in rural development.

Small Low Resource Farmers Complementary and Supplementary Farming
Activities for Productivity and Livelihood Sustainability
Dr Augustine J. Udoh, aughtine@yahoo.com

Th poor-low resource farmers rely on keeping one or two goats or sheep as a source of
savings. However, much of his food for the family comes from his small plot of land that is
planted to four to eight crops. For instance, cassava and maize are planted as base crops and
intercropped with vegetables like okra, fluted pumpkin, bitter leaf, melon, cocoyam, cowpea
and with one or two stands of oil palm as a permanent crop. In recent times, Gnetum
africanum, a climber has been introduced as an additional vegetable crop in the farming
systems of the area. The proceeds from the plot are supplemented with non-timber forest
products (NTFP) consisting of tree legume seeds, ols, fodder and fuel wood. A study to
determine how the poor-low resource farmers in Akwa Ibom State in the southeastern zone of
Nigeria (Latitude 4o30’and 5o53’N and Longitude 7o25’ and 5o25’E) enhance their
livelihoods and productivity was undertaken. The State of Akwa Ibom was divided into six
zones. The six zones do not differ from one another with regards to major characteristics.
Four zones were randomly drawn to take part in the study. The four zones were subdivided
into four sub-zones respectively making a total of 16 sub-zones. Twelve sub-zones were
randomly drawn from the sixteen. Twenty farmers were purposively selected from each of the 12 sub-zones making a total of 240 farmers and 120 farmers randomly selected from the list of 240 to take part in the study. The results show that 100% of the farmers are low resource in characteristics. The farmers have a family size of 8-12 members and with low level of education. Annual income ranges from $20-45 and with size of farm from 0.2-0.5hectare. Over 90% of the farmers depend on intercropping the small plots that they cultivate and harvest NTFPs to augment their farm proceeds. Most of their farm products are harvested for family consumption before the farmers can think of any sales in the rural markets. Most members of the farm families take part in the farming activities and labour is over-supplied. This study therefore suggests building blocks on small low resource farmers effective utilization of their farm plots, storage and marketing of their farm proceeds and improvement of their lifestyle.

**Features of the System of Rice Intensification (SRI) Apart from Increases in Yield**

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The System of Rice Intensification (SRI) -- by changing the way that rice plants, soil, water and nutrients are managed – has its most obvious and dramatic effects on yield, generally raising yields by 50-100%, and sometimes even more. But there are many other considerations why farmers, governments and donor agencies should consider use or support of SRI practices that are now being increasingly documented in a number of countries.

**Vulnerability of Small Farm Systems and Farmers’ Coping Mechanisms towards Land Use Change and Land Conversion**

Amparo M.Wagan, amparowagan@yahoo.com et al.

Suggested Authors and Affiliations: Agricultural researchers, extension workers, and development planners from various institutions in developing countries in Asia mandated to do action research and development activities in rural areas. The proposed activity will involve paper presentations and plenary discussion on the effect of land use changes on small farming systems, vulnerability assessment of small farming systems to the inevitable land conversions that go along with rising industrialization in developing countries in Asia and model cases and innovative approaches to cope with the adversities of land conversion in these areas. Participation of agricultural research, extension and development workers representing various countries in Asia will enable thought-provoking discussions on real cases, issues and concerns on the effects of land conversions on the livelihood of small farmers who were the target of development activities during the last two decades (beneficiaries of farming systems development programs then) and farmers’ current and possible coping mechanisms to avoid adverse impacts of these (already happening) changes on their livelihood. It is timely and appropriate to have an activity that will provide a venue for exchanging experiences and knowledge on courses of actions needed to pursue efforts to uplift the plight of the small farmers, and could also be the start of IFSA sub-network of R&D workers towards making recommendations for the formulation of rural development policies and strategies at national and regional levels.

**The Comprehensive African Agriculture Development Programme (CAADP) NEPAD vision for addressing food and rural development issues in Africa: Originality, methodology and way forward in remodeling development policies.**

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The CAADP, a framework for renewing agenda for agriculture development in Africa mobilizes a continent-wide participatory methodology that makes it original as compared to what used to be done before. This paper wants to make a critical analysis of the reliability of this approach and discuss its sustainability in the long run as well.

Socio-Economic Impact of a Cocoa Integrated Crop and Pest Management Diffusion Knowledge through a Farmer Field School Approach in Southern Cameroon

Njankoua Wandji D., Lapbim Julius N. James Gockowski and Tchouamo Isaac

We focus on the Socio-Economic Evaluation of Farmer Field School Training on Integrated Pest Management in the humid forest region of Cameroon. The main objective was to assess the impact of the training on integrated pest management (IPM) on cocoa farmer field school graduates.

The results indicate that shade management, phytosanitary harvest, pruning, improved spraying practices and grafting of improved materials were adopted at the rate of 94, 93, 90, 66 and 35 % respectively, with the overall rate of adoption of 76 %. There was a 47 % reduction in the frequency of spraying fungicides and a 17 % reduction in the number of sprayers applied per treatment following the implementation of the training. Labour inputs increased significantly for pruning, phytosanitary harvest, and shade management but decreased for spraying. A partial budget analysis reveals that the IPM practices lowered overall costs of production by 11 % relative to previous practices.

Sustainable Tree Crops Program (STCP): Realizing a New Development Paradigm,
Stephan Weise & Martine Ngobo m.ngobo@cgiar.org

Through a strategic alliance between tree crop farmers and communities, the worldwide chocolate industry and trade, governments, research institutes and the public sector, STCP aims, since 2000, at improving the economic and social well being of smallholders and the environmental sustainability of tree crops farms. STCP is a viable platform for partnerships around a common vision, functioning effectively on the ground in multiple West African cocoa- and cashew-producing countries and already having clear impact on lives of farmers.

Surprising new partnerships in the journey to a sustainable rural area in Noord-Brabant in the Netherlands. Theory and practice
Geert Wilms, geertwilms@stuurgroeplib.net and Rob Maessen

The agricultural sector is as much in need of resolving the global challenges as anyone else. Since the role of national governments was scaled back, expectations of corporate responsibility have increased. Meanwhile, a new generation of non-governmental organisations is appearing on stage, involving practical examples of collaboration between the civil society, the private sector and the public sector that are successful in tackling particular global challenges in local settings. These new types of relationships – or strategic partnerships – reflect a shift in attitude from trying to avoid harm or compliance, to being responsive in actively meeting reasonable stakeholder expectations, to being fully engaged in order to maximize economic, social and environmental value simultaneously. This presentation will include first hand experiences from working with these partnerships and draw lessons relevant for wider global contexts.
Food Security and the Sustainability of Rural Livelihoods: Recent Trends in Syria
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Since 70% of the Syrian agriculture is rainfed depending on the rainfall rates, priority should be given to study the negative impacts of the fluctuating crop and tree production on the farmers income from one side and on the off-farm income which affect the sustainability of the household living of the rural people from the other side. Then, to study the relationship between the different types of household’s expenditure on food and the non-agricultural activities. There is no pure agricultural income in Syria and no full time farm job among villagers due to low wages, climate conditions, and low crop productivity, so 50 percent of the hh income comes from the off-farm activities. To study the relationships between the low productivity of agriculture and the misuse of land and water resources. Losses and deteriorating and polluting soil and water. Inefficient use of resources lead to low productivity and to low return which in turns leads to exiting agriculture seeking other income sources. Inequality in market access results in low productivity. Relationship between population growth rate and poverty and migration.