

Comments on: ..Networking 24 Latin American and Caribbean Countries by E. Murgueitio and R. Espinel

From: Dr E R Orskov <ero@rri.sari.ac.uk>

Comments on Network in Latin America (thirty fourth paper)

I would like to ask a question related to the interesting article on the network on integrated use of sugar cane and local resources.

The authors outline a very successful network of scientists and refer to many interesting technologies that have been developed. The feeding to animals of sugarcane juice, etc., has, as the authors pointed out, been researched for about 25 years. What I feel is missing from the article is an impact statement similar to that provided by Guo Tingshuang on the number of farmers using a technology in China.

How many thousands or millions of farmers are currently using the technologies in Latin America?

These statistics may not be readily available but they are useful for the readers. It is all very well to know how many meetings have taken place and how many books have been published. The proof is how many farmers are benefitting and using the technologies. I am very impressed by the work so I hope this question is taken in a positive way. I am sure the authors have the information.

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From: Frands Dolberg <frands@po.ia.dk>

Comments on "the Outcome of Networking 24 Latin American and Caribbean Countries on Integrated Use of Sugar cane..."

On Networking:

I had the same thoughts as Bob Orskov. This networking seems to have gone very well according to a number of indicators. However, if we want to be critical - in a constructive sense - we also need to say that all these indicators (number of technologies demonstrated, books and videos produced, etc.) were all controlled by the "Networkers".

Adoption of technologies is not controlled by the networkers, but rates of adoptions are of course in a sense the final proof. But that is not all. Rates of adoption may also tell something about Government policy (conducive or not) including the institutional situation to back up adoption: Are extension services Govt or NGO in place?

Finally, this conference has shown many very interesting and fruitful examples of developing technologies in interaction with farmers. Our next step is now to see if such technologies can be adopted on a much wider scale and if not, why not? Thus we must move on to inclusion of these variables as well.

Frands Dolberg

**From Reg Preston <thomas%preston%sarec%ifs.plants@ox.ac.uk>
Reply to Bob Orskov's question on how many farmers are feeding sugar cane juice and comparison with the China "straw programme"**

Certainly the number of farmers using sugar cane juice can be numbered at most in hundreds (mainly in Vietnam and in Philippines) and certainly not in thousands. Sugar is a subsidized commodity in Colombia (Government fixes the price) and in most developed and developing countries (Philippines and Vietnam are exceptions) so the playing field is not level.

By contrast, we have the opposite situation where cereal grain is subsidized for animal feed in Europe and USA. There are thousands of farmers in developing country that use cereal grain to feed to ruminants.

Do we take this as proof of adoption meaning that the technology is an appropriate one?

Concerning the China "straw programme", China is China and very different from the rest of the world. The straw treatment programme was executed and supported by Government. This support, partially subsidized, helped to secure implementation and facilitated the gathering of the statistics.

It is much more difficult to have similar data for other "new" technologies which have not had such strong institutional support. A related question is: *How many farmers outside of China have taken up straw treatment and do we have statistics about this?* I think the answers are probably "very few" and "none", respectively.

I think there are various issues to consider. And until the practice of economics takes into account the real cost of fossil fuel and damage to the environment, technologies that are ecologically sound will always be at a financial disadvantage.

This does not mean that we should not do research on sugar cane juice (or other non-conventional feed resources). The reasons for promoting sugar cane have more to do with self-reliance (using efficiently free solar energy) and the environment (it improves soil fertility) than with short term economics. Natural resource management and use of local resources is the goal of all of us. But it is a long haul and the opposition to change is well endowed both politically and financially, and the vested interests are many.

Reg Preston from Philippines

From: Frands Dolberg <frands@po.ia.dk>

Comments on Reg Preston's reply to Bob Orskov's question on how many farmers are feeding sugar cane juice and comparison with the China "straw programme"

We have added miles to the research typically carried out in labs and on-stations, but getting out on farms as demonstrated in the contributions

in this conference.

I argue the next step is to direct more attention towards reasons for adoption or non-adoption, where Government policies (subsidies etc, certainly are crucial). Such analyses may - in future - become part of livestock projects.

We should certainly do our best to distinguish between technologies which are good per se and policies, which distort or promote them.

In the early days of straw treatment work I understand it was tried in at least 30 countries and basically failed.

I suppose it is a lesson for all of us that factors both at farm, institutional and policy level are responsible.

Frands Dolberg

From: "E. R. Orskov" <ero@rri.sari.ac.uk>

Comments on Reg Preston's reply to Bob Orskov's question on how many farmers are feeding sugar cane juice and comparison with the China "straw programme"

Dr Preston has raised an interesting question which we must if possible discuss further.

First of all it would seem that all of us participating in this interesting e-conference could agree that our research should be problem led and identified clearly as the constraint or constraint which need to be alleviated to assist the small farmers in increasing prosperity and security. For this purpose PRA has been used and many other means of identifying farmers problems. Sometimes the problems can be solved directly with on farm trials with farmer participation sometimes the problems have to be solved on station to gain more control of the variables and to add extreme treatments to increase understanding which cannot readily be done on farms.

Then we have another angle. All of us are keen on sustainable technologies, environmental issues figure high on the agenda as indeed they should. So while some research may be the optimal environmental

solution the fact that few farmers use it must mean that it is not the optimal solution for them given the present structure, including price of products, land tenure arrangements, market conditions, extension set ups, training of extension officers, policy makers etc.

We may therefore have a dilemma which we must face squarely. If the solution to constraints we have identified and which of course must in part be related to many other factors is not the optimal environmental solution what do we do?

Do we create an environmental research fraternity which is not plugged into farmers problems but seek to find solutions to perceived future problems rather than present problems. If so can this be adequately funded? I like to have more debate on these interesting issues raised by Dr Preston. Frands Dolberg pointed towards some solutions but I think it is an important issue which need further discussion.

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**From Andrew Speedy <andrew.speedy@plant-sciences.oxford.ac.uk>
Adoption of technologies**

In response to Bob Orskov, Reg Preston and Frands Dolberg:

There is a danger of 'expecting' the adoption of technologies and, indeed, this is often held as a measure of success of a 'project'. The 'livestock project' is itself top-down focussed. A better approach (advocated by Robert Chambers, Anil Gupta, etc.) is the 'basket of choice' or 'portfolio' approach. Yes, we develop technologies with on-farm research, then we make information widely available and it is the choice of the farmer to select the appropriate ones for his or her environmental and economic circumstances. The role of enablement should be included.

This is the philosophy behind Tropical Feeds (and also LRRD and other communications): to increase the knowledge and awareness of appropriate and environmentally sound ideas and to 'make them

available'.

Governments and agencies need to change their approach to allow diversity of systems and not to push 'the project'. It is the antithesis of current 'accountability'! There is also the adverse effects of subsidies on not only cereals but also cheap oil.

I am reminded of my 9 years in extension in the 70s. I was surprised at good technologies that were only being adopted 20 years after the research was carried out (eg. parasite control in sheep and cattle). I learned that time and opportunism are factors too. And the proper development of whole farm systems.

Information published in Tropical Feeds will be made widely available and may be adopted in different locations and at different times. But diversity is an objective in itself.

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**From: Marco A. Esnaola MESNAOLA%eapdzo@sdnhon.org.hn
Comments on Reg Preston's reply to Bob Orskov's question on how many farmers are feeding sugar cane juice and comparison with the China straw.**

With regard to this discussion on farmer adoption of some of the technologies we have been discussing in this conference, as a member of the Network at Zamorano in Honduras for almost 4 years, pushing forward the integrated technologies of using sugar cane juice for pigs and ruminants. We have produced some results that confirm that with proper protein supplementation growing pigs can get from 550 to 650 g and that pressed cane stalks and tops fed freely, again properly supplemented, can produce on steers or water buffaloes gains ranging from 450 to 550 g/day. We have presented these results to farmers and technicians in a number of ways: technical meetings, training courses, magazines and even articles in newspapers, but still I have to recognize that nowadays not many farmers, either big or small, in Honduras are using these

technologies. Why is this? I agree with Dr. Preston's comments that political and economical reasons can explain this, but in my personal view working with these technologies there are some other reasons that we have to consider.

1. How much demanding on hand labour are these technologies?
2. Is the farmer really prepared to pay or spend his own time in something that is physically very demanding, tedious, dirty and time consuming as cutting cane by hand? (At the moment Zamorano students with the help of some hired labour are helping me in cutting, crushing and milling cane for a 60 pigs and 15 steers feeding experiment and they complain a lot of the amount of work involved)
3. Don't you think that if the farmer has to do this daily (I mean the crushing and milling of the cane), he will not be very happy? and maybe he will be thinking that it is much easier either to buy a bag of a balanced concentrate for the pigs or to have the steers grazing in a paddock?
4. Don't you think that we have to look more closely at these issues, and try in our research to measure these things, or alternatively to look for ways of making things easier for the farmer?

I do not have the answers to these and many other questions that you brought up with regards to this subject, but surely you would agree with me that it is something that we should consider, when we talk about farmer's adoption.

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From: Frands Dolberg <frands@po.ia.dk>

Comments on Adoption of technologies

Comment to Andrew Speedy:

True the concepts of "baskets of choice" or "menus" of possible alternative technologies among which farmers can pick and choose have much merit.

I have come to think of integrated systems as such "baskets" or "menus". When in early 90s farmers in Vietnam across the country were exposed to a number of technologies they chose and rejected according to site.

In the Mekong Delta and around Ho Chi Minh city the plastic biodigester found uptake probably aided by Govt legislation (manure and human waste were not allowed into water bodies) and good technical backup (see Mr Bui Xuan An's paper in this conference).

In the remote hills in the North the sugarcane juice technology found acceptance as it was difficult to transport cane to the market. Close to good roads where transport access was easy and cane prices good it found less acceptance.

Frands Dolberg

From Rena Perez <71055.111@compuserve.com>

Comments related to sugarcane as animal feed

Dr. Orskov's question related to *"how many thousands or millions of farmers are currently using the (sugarcane feeding) technologies in Latin America?"* perhaps should be first addressed by asking *"how many thousands or millions of small-scalefarmers in Latin America can read and write?"* Much less attend lectures, conferences and seminars where they would be scared by the use of such words as "digestibility" and "metabolizable energy" and all that.

I live and work in Cuba, I suppose one of the few countries in Latin America with a 94-96% literacy rate, with hundreds of agriculture-oriented institutes, but I continue to be amazed at how little farmers really understand about feeding animals.

Our agronomists, vets and animal nutritionists attend all kinds of meetings, write in sophisticated journals, are computer literate, but as Dr. Orskov also intimated, is it getting down to grass roots?

I hope we don't kid ourselves by assuming that because some of us now communicate by E-mail, publish in the diskette-journal, LRRD, and are participating in this marvellous FAO-inspired E-mail conference that small-scale farmers are any more aware of us.

How do we address the increasing "intellectual/technological" gulf between small-scale farmers and the rest of us, or perhaps put bluntly in another way, how many farmers have participated in this conference?

The question of "extension" and/or "technology transfer", i.e., how to get all this beautiful material and/or technologies down and out, as Andrew Speedy has further emphasized "make them available", has yet to be addressed.

Furthermore, Marco Esnaola from Honduras has brought up a good question: sugarcane for animal feed is hard work. Floyd Neckles from Trinidad-Tobago would surely second that, and also agree that most small-scale farmers, with access to cane, would prefer to buy a bag of feed upon returning home from their city job. My experience in several Caribbean islands in trying to promote the use of sugarcane for animal feeding has been that, in most cases, individual small-scale farmers do not have sufficient capital to invest in the required equipment: a juicer and a forage chopper. They like the technology because the cane is theirs, however, the two pieces of equipment, the juicer and chopper, can easily represent five thousand US\$ while a bag of feed can be purchased on the way home for eight US\$.

In several outlying semi-rural communities near Havana, where the FAO-promoted sugarcane/protein tree/molasses block/soybean forage technology is gaining in "intellectual" popularity, particularly with those who have several pigs and a cow or two, the local authorities are studying the idea of organizing communal areas for growing cane, protein trees and even soybean forage. In addition, in Barbados, one has read of new interest in developing communal areas for grazing cows. Perhaps these ideas could be further exploited in other countries with similar problems.

Rena Perez

From Enrique Murgueitio <cipav@cali.cetcol.net.co>

Answer to Bob Orskov's question on his paper "The Outcome of Networking 24 Latin American and Caribbean Countries on Integrated Use of Sugarcane..."

1. We do not know the exact number of farmers who are using sugarcane, fodder trees, aquatic plants, plastic biodigestors and other tropical resources in integrated farming systems in Latin America.

2. The main objective of the Network is to provide information on recent advances related to these topics (research and application at farm level) in Latin America and the Caribbean, in order to encourage the planning and funding of specific mechanisms for the dissemination of ideas that can be introduced into existing production systems and with different cultural and socio-economic backgrounds. The Network does not aim at technology transfer based on direct interventions with farmers and financial incentives for promoting the technologies. It is an informal exchange of experience, knowledge and training aimed at influencing all the people involved in decisions related to the technologies that are proposed to the farmers: scientists, professionals, technical assistants and leaders of a very heterogeneous range of governmental institutions, ONGs, private firms, community groups and some farmers.

3. In Latin America and the Caribbean, there are various reasons for giving priority to this sector as it is a critical one where changes can have future knock-on effects on the thousands and millions of farmers that Dr. Orskov is looking for:

a. Those who plan and make decisions are the professionals and the technicians. In most countries, except Cuba and certain agricultural schools in other countries, the agricultural training curriculum is based on the specialized non-tropical production system model (concentrates, cereals, extensive grazing for cattle, use of chemical fertilizers and pesticides). The region is full of people that think and decide without knowing about tropical resources and indigenous knowledge.

b. In recent years, the macro-economic decisions that have been imposed on Latin American countries by the industrialized countries (structural adjustment, neo-liberalism, payment of the external debt, reduced attention to the agriculture sector, breakdown of food security) have

encouraged the "invasion" of subsidized cereals from large north American monopolies. The attempts to build production systems based on local resources are competing unfairly with industrial animal production models. In these countries, the social and environmental cost is serious and nobody is paying for it. It is necessary to change the mentalities of those who favour and approve these so harmful decisions: scientists, professionals, technicians and leaders are playing a major role and are more difficult to convince than farmers, because they were educated in universities with a different vision.

c. The centralized technology transfer systems are in crisis: the role of the state in the rural sector is being increasingly reduced. The programmes of technology transfer and technical advice are spread among hundreds and thousands of private groups, ONGs, local governmental entities, most of them without resources and without knowledge on the sources of research results appropriate to our agro-ecological, social, economical and cultural reality.

d. The poor farmers' social organizations have very little power in most countries. They represent a social sector looked at with disdain by the politicians. They do not receive financial resources and their priorities are focused on fundamental rights such as peace, democracy and land tenure (Latin America is one of the places where the access to land is the most unequal, the "latifundios" (large land holdings) dominate). The decisions related to how and with which resources to produce are not the priorities for most corporative movements, unions' leaders and popular organizations that are preoccupied with more critical problems related to their survival. The possibility of achieving major success through popular organizations (fragile themselves) with appropriate technology proposals is limited.

3. The technology promoted by the Network is a modest contribution which takes into account the fact that there are structural problems much bigger in most regions of Latin America and the Caribbean, where it is not possible to have influence in a modest project with few people, little financial resources and limited time. Despite the difficulties met through the official and bureaucratic pipelines of every country, our results are flattering, considering the response obtained.

4. To use the number of farmers as an indicator of technology adoption is not appropriate for the Network because it is not its principal objective. What we have now is an increasing critical mass of professionals who can carry out projects of multiplication and transfer of the appropriate technology, and with the resources of every country and this is already taking place.

5. Latin America and the Caribbean is a complex environment which great biological and cultural diversity. We are well aware that it is not possible to carry out general proposals which are as sustainable as we would like them to be. The comparison with China using only the indicator of adoption is simply not appropriate.

Enrique Murgueitio, Director, CIPAV

From Ruben Espinel <cipav@cali.cetcol.net.co>

Answer to Bob Orskov's question on his paper "The Outcome of Networking 24 Latin American and Caribbean Countries on Integrated Use of Sugarcane..."

Concerning the number of farmers who work with technologies based on sugarcane and other locally available resources in Latin America and the Caribbean, we would like to add the following points:

1. All of us working with these technologies in the tropics have as our main philosophy the development of technologies which are easily obtained and applied. The farmer should not simply copy, but should be a co-researcher who understands, modifies and replicates the proposals, in such a way that the presence of academic professionals is not indispensable to guarantee that the technology persists, reproduces itself and evolves.

2. The development of the proposed technologies has involved the exchange of scientific and local knowledge. This has been continually enriched by capitalizing on experience and success does not depend on the technology itself but on the interactions between geographical, climatic, cultural, social, economical and political factors.

3. We hope, considering the above, that one can understand that it is difficult to get statistics on the number of farmers who adopt the technologies and it would be unfair to refer to the farmers as 'users' because they are not given a technological package but a range of flexible options to apply and modify according to the local conditions.

This does not signify that there is no massive dissemination of the technologies, and I would like Dr Orskov to share his large experience with us by indicating what would be the appropriate and sure method to follow up and obtain accurate statistics on the number, not only of farmers from the rural sector who are participating in this process, but also of the decision makers, professionals and technicians that are aware of, involved and committed to the adequate sustainable development of the rural sector in Latin America.

Ruben Espinel, Researcher and Coordinator for Extension, CIPAV

From E. R. Orskov <ero@rri.sari.ac.uk>

Comments on the answers to his questions to Enrique Murgueitio and Ruben Espinel (34th paper)

I would like to thank Drs Murgueitio and Espinel for their replies. I take your point and look forward to hear in the future of a real fast uptake by farmers. A network as Dr Dolberg pointed out can, if you are not careful, give the impression of a top down approach which seldom works. We hand it to the farmers and hope they use it! I sympathize with your comments re specialized education systems emanating from the west and causing many problems when we want to see livestock in their holistic interaction between plants and soils. We have to influence decision makers or some of you better be decision makers yourselves in the future. I also sympathize with the poor farmers social organization. But I also have experience that if you have the right message and take a bottom up approach then a technology can spread with very little cost and effort as the farmers teach each other. I think you have the right philosophy and that is the most important. We have to remember that we are the servants of the farmers and not their masters so we have to listen to the needs of

our clients.

I would like also to make a comment to Dr Rena Perez when she says that she is amazed at how little farmers know about feeding animals. I have to admit that I am amazed on the whole as to how much they know and I have to admit that I have learned a lot from illiterate farmers in Asia and Africa probably more that I have taught them!

A final thing I like to add to this is that in my experience there is not a single technology which has universal application. As scientist we often get excited about a technology we have been closely involved with and perhaps even developed or modified so we push it perhaps too arrogantly assuming it is good for everybody. This is perhaps an extreme point but each technology has its niche or niches which we must recognize otherwise we will not help our client who is the final arbiter.

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