Learning INnovation Knowledge

Policy-relevant Resources for Rural Innovation

UNITED NATIONS UNIVERSITY
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LATEST AT LINK

EKIN KESKIN MOVES TO LINK HYDERABAD

LINK Ph.D. Researcher Ekin Keskin joined the LINK office in Hyderabad in November, where she will continue to work on dissertation. Ekin, whose research focuses on pro-poor innovation response capacity, conducted her fieldwork in Ethiopia as part of LINK's East Africa Rural Innovation Policy Studies Hub. She was based at the International Livestock Research Institute (ILRI) in Addis Ababa, where she studied the development of response capacities to cope with evolving markets, norms and standards in the livestock sector in Ethiopia and Kenya.

Ekin (centre) with her ILRI colleagues Dr. Markos Tibbo (left) and Rahel Mesganau (right).

AN INNOVATION WISHLIST FOR ASPIRING PHILANTHROPISTS

In this month's LINK LOOK, inspired by a glass or two of Christmas spirit, ***Andy Hall*** *and* ***Jeroen Dijkman*** *share their own personal fantasies about how they would spend their billions if they were 21st century philanthropists.*

LINK *look*

The Age of the New Philanthropists

Personal fortunes made in IT, financial services and other "dark satanic mills" of the 21st century are set to become the biggest grant-givers to agricultural science and technology for development. Is this an unexpected windfall for international efforts to reduce global poverty from some of the world's best-known billionaires?

Actually, it is part of a long tradition of philanthropic foundations supporting agricultural development. During the 1960s and '70s fortunes made in oil (Rockefeller) and motor cars (Ford) teamed up (appropriately enough) to fund the development of high-yielding cereal varieties to help feed Asia. Decades later there is still fierce debate about the so-called Green Revolution that Rockefeller and Ford's money triggered.

Did they get it wrong? What did we learn? How should the new, 21st century philanthropists spend their money? If you had zillions to spare, how would you spend it? We have our own fantasies that we would like to share with you.

You Don't Want to Do it Like That!

The naysayers have already told us how they how they would *not* do it. Once again we are hearing the well-worn arguments about new agricultural technology making poor

■ **Continued on Page 2**

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LINK is a specialist network of regional innovation policy studies hubs established by the United Nations University-MERIT (UNU-MERIT) and the Food and Agriculture Organization of the United Nations (FAO) to strengthen the interface between rural innovation studies, policy and practice and to promote North-South and South-South learning on rural innovation.

Pro-Poor Livestock Policy Initiative
A Living from Livestock

■ **Continued from Page 1**

people poorer; giving control of the food chain to the private sector; or leading to a biotechnology-induced environmental meltdown. Of course we all recognise the political dimensions of knowledge and how technology can be captured by powerful groups and used for their own interests. We also know that new technology carries risks. But these old arguments provide few new ways forward and bear a striking resemblance to the anti-science and anti-enterprise prejudices of yesteryear development thinking.

The question that nobody seems to want to answer is just how we use agricultural science and technology to enable people-centric, entrepreneurial and environmentally-friendly innovation. Side-stepping this issue *will* ultimately make poor people poorer. We have no doubt that agricultural science and technology can reduce poverty. The problem is that we have not been very good at learning how to do that. There has been some success in Asia, but the lessons are unclear and not universally applicable. In Africa we need to learn much more, and we need to learn fast.

The new philanthropists have been brave enough in their grant-giving programmes to suggest a way forward in making better use of agricultural science for development. Let us step into their expensive shoes and put our make-believe money where our mouths are.

The Mental Maps of Philanthropists

The first thing to remember about being a philanthropist is that you have to have your own homespun philosophy on how development should be "done". This usually reflects how you made your money; your rags-to-riches rise from humble origins in Smalltownsville; and what country you come from. The country of origin is quite important here because however much we might like to think we are citizens of the global village, we are all carrying huge amounts of our own cultural and historical baggage. Indian philanthropists, for instance, are quite different from their North American counterparts.

Your homespun philosophy, after various public relations makeovers, becomes the guiding principle for your foundation. Academics would call this a conceptual framework. It is the philanthropist's mental map of how the world works and how "development" can be achieved. It often has an undeniable ring of truth to it — "all that poor people really need is more money" (and we didn't make that one up!). As an operational strategy it can look a bit weird. Put billions behind it and it can be really rather scary. We will share our homespun philosophies with you in a moment.

Anglo-Dutch Innovation Preoccupations

Since our aspiring philanthropists, Andy and Jeroen, are British and Dutch nationals our homespun philosophy has to be understood in those terms.

Let us start with the Brits. Famously class-conscious and segregated, decisionmakers are Lords sitting in a Gothic place, scientists are weird-beard boffins locked in ivory towers, and somewhere near the bottom of the social order are the under-educated, dirty, hirsute entrepreneurs who have the distasteful task of making money. The class system was only officially "abolished" by shop-keeper's daughter Maggie Thatcher in the 1980s, so the Brits still feel a bit uncomfortable with education and collaborative relationships.

LINK *look*

The Brits have always had great scientists — they "invented" gravity and evolution! But what they excel at is being a nation of gifted amateur-inventors. The jet engine, telecommunications (sort of), marmite and the computer (mainly) were invented, without research council funding, in wooden huts in British suburban gardens by plucky chaps called Colin and Brian. And then having come up with such world-beaters, the Brits gave them away. For nothing! The whole of British industrial policy in the last 30 or so years has been obsessed with trying to put this right.

No wonder Andy's mantra is about making better use of ideas from scientists and others and bridging the gaps between enterprise and other elements of the economy. He also worries that he has been locked in his ivory tower too long and nobody can decipher his innovation-speak.

Now to the Netherlands. It is a small and rather damp country, but they like to make the most of what they have. Unlike the Brits they have a very equal society and feel much more comfortable with linking and collaborating with each other.

The Dutch have many good ideas — have you ever met one who doesn't tell you about their ideas? Since they are well-linked together, they have been very successful in using these ideas and innovating. In the long-term this has allowed them to create a hugely successful economy — a worthy effort considering their main natural resource endowments are wind and incessant rain.

Take the case of their horticultural industry. In a country where the sun only shines when there is a Z in the month, their ability to use ideas effectively has allowed them to develop one of the most successful (and now environmentally sustainable) greenhouse businesses in the world — helped by lightbulbs from Phillips, of course.

Coming from such an egalitarian nation, where agriculture has reinvented itself in response to "green" concerns of society, it is not surprising that Jeroen is obsessed with strengthening innovation response capacity for social relevance and economic resilience.

Anglo-Dutch Homespun Innovation Wisdom

So what innovation principles emerge from our Anglo-Dutch cultural baggage?

- *Inventions are for idiots, make ideas count.* Translation: Good ideas are not worth the paper their patent application is written on, unless you can use or combine them with other ideas to make money or make people happy.
- *Learn to love linking, and link to learn loving.* Translation: Linking, collaboration and learning are important for innovation and can help you learn how to collaborate and innovate better in the future.
- *Innovate for society or die*. Translation: Succeeding today doesn't mean you won't fail tomorrow. Use ideas to respond to what society wants. It might be productivity today, but environment or the desire to reduce poverty or support enterprise tomorrow. Or all of the above. But respond for society you must.
- *Educate to innovate*. Translation: New thinking on how to use ideas and science will remain part of the psychobabble of innovation theorists unless you are able to get this thinking into higher education and inspire a new generation of scientists, planners and development professionals.

An Action Plan for Agricultural Innovation

So how will our homespun principles play out in practice and translate into action? Our focus here is African agriculture as this is where the challenge seems to be. Our homespun principles tell us that supporting innovation is not just about fixing today's problems, so our mission is to strengthen innovation capacity for the long-term. In line with our desire to support all of society's needs, this capacity must be responsive, people-centric and enterprise and environment-friendly. We give ourselves 10 years and a development fund of 100 billion Euro-Pounds. Here is our 8-point spending plan:

1. Learning to Innovate for African Agriculture Fund — €/£ 25 billion

***Diagnosis*:** Declining soil fertility, pest and disease problems, low and unreliable rainfall and low food production are key concerns in Africa and have been the major focus of national and international agricultural research for many years. Progress has been limited and variety-based technology packages have not worked as well as they did in Asia. While many constraints are amenable to bio-physical research, the bigger problem is the limited impact of the already very large public investments in agricultural research over the last 40 years.

***Solution*:** Based on a review of accumulated innovation experience in Africa on these topics, establish 10 pilot research programmes that combine all that is currently known about enabling innovation — participatory methods, systems thinking and technology transfer. The pilot programmes should be risky — we expect at least half to fail — and should be orientated towards learning what approaches to agricultural innovation work in practice.

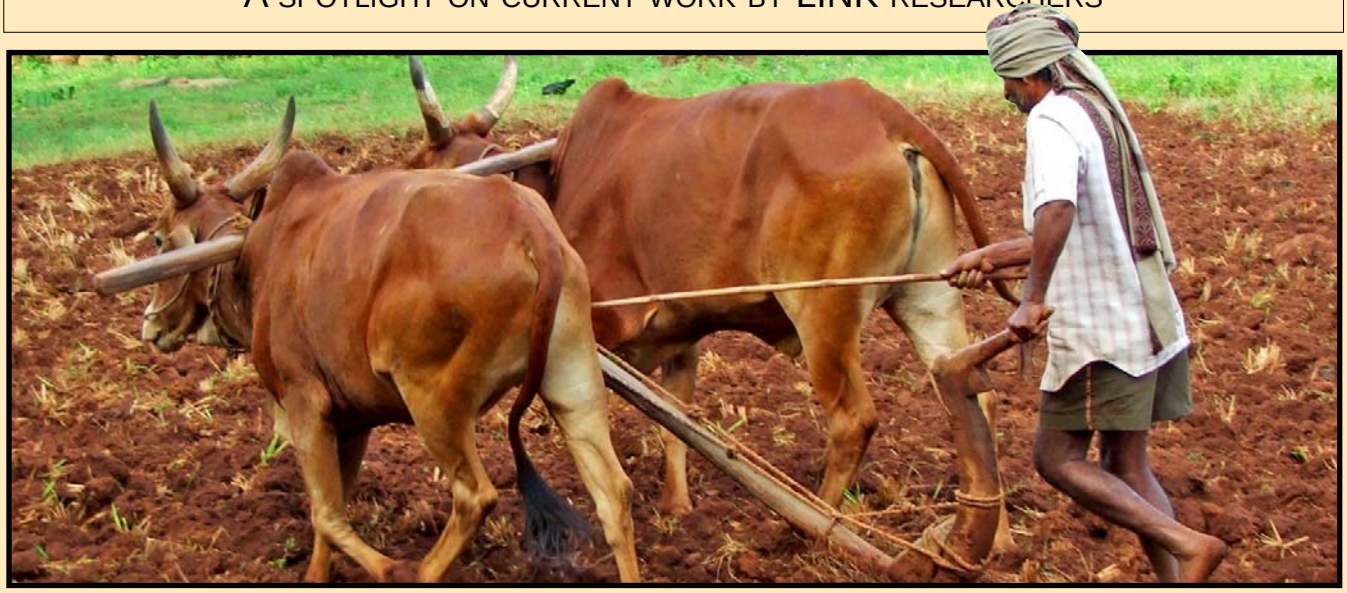
2. Rapid Innovation Response and Resilience Fund — €/£ 10 billion

***Diagnosis*:** African farmers and agricultural entrepreneurs face an unfolding and

■ **Continued on Page 4**

LINK RESEARCH IN FOCUS

A SPOTLIGHT ON CURRENT WORK BY LINK RESEARCHERS



Fodder Innovation: Revisiting an Old Problem

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Adequate year-round supply of fodder is one of the biggest problems faced by livestock keepers in developing countries. It does not matter if they are pastoralists in the semi-arid regions of West Africa or cooperative dairy farmers in India, finding enough fodder for their animals is a constant struggle. While the underlying reasons may be different, the fact remains that access to fodder ranks alongside animal health as the key to success.

Not surprisingly livestock scientists identified this as a problem many years ago. Since the 1960s a range of technologies have been developed to deal with this problem: improved forage species; various silage techniques; and the development of cereals and legumes with straw and other residues more suited to animal nutrition. In the same way development projects have introduced fodder banks, and, to help introduce new fodder species, alternative cropping patterns. Sadly — and most livestock scientists would be the first to acknowledge this — the results of these efforts have been quite disappointing.

The International Livestock Research Institute (ILRI), with the support of DFID, has been trying to tackle this problem over the last five years. It began by testing to see whether partnering with local organisations would be a better way of transferring technology to farmers. The approach had some success, but it also revealed other problems that were stopping farmers using new practices.

It found, for example, that public seed systems were often arranged in ways that did not supply fodder varieties chosen by farmers and the private sector was reluctant to distribute seeds when initial demand was low. Often adoption of fodder technology was only worthwhile if animal health services were available or if there were links to markets. Difficulties arose because, for some reason, it was difficult to get different organisations to work together to achieve this sort of complementarity.

In other cases it was found that since fodder requirements depended on unpredictable climate and market conditions, this year's solution to the problem may be inappropriate to the situation in the next year. In some cases fodder shortages were caused by technical problems, but policy and institutional problems, such as access to common property grazing.

ILRI realised it needed to refocus its efforts. First, it needed to work out which organisations in a particular location to work with so that technology selected by farmers could be backed with technology supply, complementary information-based services, and, depending on the situation, access to markets. Secondly, it needed to work out what was stopping organisations working together and focus on changing the habits and practices of these organisations to help them work as part of a bigger collective and collaborative effort.

Thirdly, it needed to identify and tackle policy and institutional factors at national levels that were affecting activities locally. This, in turn, meant identifying the individuals and organisations in the policy process needed to help bring about policy and institutional change.

It was at this point that ILRI started working with researchers from UNU-MERIT who were interested in the agricultural innovation process. Their argument was that innovation was not a simple process of transferring technology to farmers. They believed innovation included a larger set of activities that both created technologies and ideas and which put this information into use. They also believed that innovation was a demand-driven, responsive process. Not just in the sense of responding directly to farmers' needs, but responding to unpredictable shocks and opportunities that affect the agricultural sector. In other words innovation was not about the introduction of one new technology or one policy change, but a continuous series of changes to help keep up-to-date with unfolding circumstances.

Like ILRI, UNU-MERIT researchers recognised there was a very wide spectrum of organisations involved in the innovation process and that the way it works — or often does not work — was very much a product of the routines in these different organisations and the policies they respond to. So, for example, it recognised that many civil society organisations are wary of the private sector, which, in turn, often does not take scientists very seriously. In their defence, scientists are still told to publish or die rather than participate and be promoted. No wonder they do not work well together!

For innovation researchers the big question is how to join the dots to get these groups to operate effectively as a well-articulated system — this is often referred to as an innovation system. Part of this question is about policies and other rules and incentives needed to make sure innovation not only takes place, but does so in a way that helps vulnerable agriculturalists. The reason scientists' well-crafted technologies fail to get used is precisely because they — and all others with roles in innovation — are in malfunctioning systems with missing links and misaligned rules, policies and politics.

The UNU-MERIT researchers argue that if one follows this logic the task of tackling fodder scarcity is not a technology development and transfer task, although this is part of it. They argue that the task is to tackle these system malfunctions — missing links, misleading incentives, and unresponsiveness. They argue that fodder scarcity is not a

■ **Continued on Page 4**

FODDER INNOVATION

■ **Continued from Page 3**

result of technology scarcity, but of innovation capacity scarcity. Get the capacity right and a continuous process of technical change will follow.

DFID has funded ILRI, UNU-MERIT and their partners to explore whether this new focus on innovation capacity can help address the fodder issue. It is a difficult piece of research and it challenges many of the traditional approaches to this problem.

For example, instead of looking at the technical determinants of fodder scarcity, diagnostic studies for project planning have instead investigated the existing patterns of linkage between relevant organisations. Baseline studies to track impact have not only had to characterise farming and livelihoods, but also the way different organisations work — how participatory they are, who they work with, and what are the politics and powers that shape this — as this is where changes in innovation capacity will be apparent. Similarly, the expected outcomes of this research will not be technology packages and recommendations, but principles about how to bring together the groupings of organisations needed for fodder innovation and how to stimulate the policy and institutional changes needed to support this.

The research is at a very early stage and will start its action phase in 2008. Let us hope that it moves forward on a problem that is as old as livestock itself — fodder shortage. Watch this space.

■ Continued from Page 2

unpredictable series of shocks — product standards and competitiveness in international markets, animal and crop disease outbreaks, climate change and recovery from civil disturbances. These require a continuous process of innovation and early warning information.

Solution*:* Time-bound taskforces, combining research and innovation services (see below) and an innovation clearing house to search for ideas globally. This will be complemented by lesson learning exercises to develop a repertoire of responses to major agricultural shocks and opportunities. This learning dimension will help build the responsiveness and resilience of rural economies. Foresight exercises will be established to scan for emerging shocks and opportunities.

3. An Innovation Architecture Fund — €/£ 10 billion

Diagnosis: Many African countries have developed excellent agricultural science infrastructure. However, as research has not been orientated to societies' needs, political support has evaporated and funding declined.

Solution**:** Improve the relevance of research and the articulation of demand for research products by strengthening linkages with farmers, industry, civil society, banks, development agencies and decisionmakers. This will be achieved by competitive, people-centred grant schemes and/ or enterprise-friendly, governance mechanisms and public-private joint investment in scientific infrastructure.

4. Agricultural Innovation Education Fund — €/£ 10 billion

Diagnosis: African universities are very good at training agriculturalists in classical botany and agronomy. But this does not prepare them for the real world where agriculture is part of a complex system of commerce, trade and uncertainty. Scientists trained overseas often return with excellent scientific knowledge but have difficulty translating these to meet local circumstances.

Solution: Establish degree courses on innovation and entrepreneurship with a strong systems orientation and problem-solving pedagogy. Use similar approaches to add modules to science courses and use short courses to reorient scientists returning from foreign training.

5. Innovation Coordination Services Fund — €/£ 20 billion

Diagnosis**:** Agricultural extension as a service to promote innovation through technology transfer does not work. Farmers need assistance in acquiring and applying a range of different sorts of information so that they can access markets and deal with other shocks and opportunities. They also need help linking to agencies and companies that they work with or get help from. Often innovation coordination services are required at a sector level, particularly in niche sectors such as aquaculture, spices and high value horticulture.

Solution**:** Support the training and retraining of public and private agents as innovation coordinators**.** Strengthen the capacity of existing organisations to perform sector coordination roles. Where these are absent create new ones.

6. Agro-Industrial Enterprise Fund — €/£ 10 billion (co-funded by a development bank)

Diagnosis: Agro-industrial development in Africa could add value and create much-needed rural employment. Currently, lack of finance and links to knowledge and innovation services prevent the emergence of companies that are innovative enough to be regionally and globally competitive and compliant to trade standards. If companies can't prosper, they can't employ poor people.

Solution: An agro-industrial development venture capital facility and the creation of specialist intermediary organisations/ knowledge services to link entrepreneurs to science and other sources of knowledge. This will help build the responsiveness and resilience of emergent private agro-enterprises.

7. Agricultural Innovation Policy Support Fund - €/£ 5 billion

Diagnosis: Innovation capacity (as distinct from science and technology capacity) is a new idea to many agricultural planners in Africa and the extent of this capacity is unknown. Benchmarking can help identify gaps, select intervention points and track progress. Participatory benchmarking and cross-country exchange exercises can help share ideas and promote institutional and policy change

Solution: Commission the development of national agricultural innovation plans based on innovation surveys, participatory benchmarking and foresight process to strengthen national and regional networking and learning.

8. Agricultural Convergence Fund - €/£ 5 billion

Diagnosis: The boundaries of agriculture are expanding to include issues such as energy and health. New platform technologies are one of the drivers of this expansion, but there are also market, political and ecological reasons. This requires research and capacity building that falls between conventional funding and ministerial mandates.

Solution: A special co-funding challenge programme to address issues at the agriculture interface.

Will it Work?

This would be our plan. Are we too naive? Will it help the poor? What would you do? Please feel free to put your imaginary billions where your all-too-real mouths are and write to us at info@merit.unu.edu. And if you have got real billions to spend we are more than happy to help you!

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