

## LOCAL IS LEKKER: THE RELEVANCE OF LOCAL AGRICULTURAL INNOVATIONS IN RURAL SOUTH AFRICA

Innovation often occurs in unexpected forms and in the least obvious places in our societies, like the informal sector. The relevance of informal innovation in rural South Africa should not be overlooked as it makes important contributions to local economies, say researchers **Alexandra Mhula-Links**, **Tim Hart** and **Peter Jacobs**.

**F**armers face constantly rising input costs and are increasingly vulnerable to fast-changing climatic challenges. These pressures force them to continually search for new ideas and farming practices that cut the costs of agricultural production, help them cope with climatic risks and allow them to farm in more environmentally friendly ways. These innovations are considered the basic ingredients of the so called smart farming revolution of the 21st century. In the larger rural context, how useful are these innovations as panaceas for the various economic, developmental, environmental and social challenges facing poorer societies today?

Findings from new research about two farming ventures debunk the old misperceptions regarding formal and informal innovation that are still entrenched in the field of innovation studies<sup>1</sup>.

The first case study illustrates how a new machine has improved the harvesting of peanuts that are produced on a fully commercialised large farm. The second example shows how a small informal farmer adopted a new method of producing liquid fertiliser from crop residues that proved to be cost saving as well. In both examples, the innovations were informally dissemi-

nated to other farmers who required these innovations.

### Questioning the formality of innovation

To make sense of the learning that flows from these examples, it is important to see them against the background of how innovations occur. Some studies indicate that innovations are often developed informally, in the sense that they are carried out by workers, managers and owners of formal enterprises (statutory registered and regulated), rather than by traditional research and development (R&D) departments or institutes with specific technology development mandates.

Exactly 30 years ago, James E Katz pioneered the area of innovation that highlighted the relevance of informal shop floor level innovation activities in formal urban-based organisations. Findings from studies in developing countries also illustrate the presence of informal innovation at formal enterprise level.

Turning to South Africa, there is an astounding lack of research documenting innovation in marginalised areas, especially in rural communities. One exception is an older study on innovation activities in Limpopo that noted while this predominantly rural



*Liquid fertiliser by combining decomposed manure and plant residues*

**These innovations often lead to improved standards of living for the inventors, their families and communities.**

1. This summary draws on an article accepted for publication in a forthcoming issue of the **African Journal of Science Technology, Innovation and Development** (AJSTID). Based on HSRC research conducted during 2012 and 2013, it forms part of the Rural Innovation Assessment Toolbox (RIAT) study, a Department of Science and Technology (DST) funded project.

province appeared to be lagging behind when it came to high-technology innovation activities, it had the largest acknowledged share of informal innovation activities in the country at around 35%. These sometimes simple innovations often lead to improved standards of living for the inventors, their families and even their communities.

### **The Peanut Blower – Dr Ruth Segomotsi Mopati District Municipality**

The Peanut Blower, a mechanical implement attached to the rear of a tractor, improves the peanut harvesting process by extracting harvested peanuts and depositing them in trucks that drive alongside. This innovation arose from a need to reduce the size of the farm workforce during peanut harvesting season, and to reduce the harvesting time to ensure the peanuts got to the market as quickly as possible. In addition, the device reduces the physical handling of the nuts, which ensures better quality.

The Peanut Blower was designed by the farmer-owner of a registered commercial peanut exporting farm. He took his design to a light engineering company in a nearby town where the design was refined and the Peanut Blower manufactured. The newly-designed machine was then tested on the farm and approved by the owner. A few months later it was diffused to other local farms through the informal networks of the farmer-owner and engineering company. A second version was manufactured and sold to a neighbouring farmer who then made some adaptive changes to suit his needs.

Despite the fact that the enterprises involved were all statutory registered entities, the Peanut Blower and the accompanying innovation activities were informal. This was

**Locally designed innovations are often based on local needs and local demand.**

because the relationships in this community were largely informal and there was no support from sectoral or national innovation systems actors, such as the science councils, universities or private commodity research institutes.

Locally designed innovations are often based on local needs and local demand, and can be distributed to other areas by means of larger networks. Local networks have a limited capacity to spreading innovations beyond local areas.

### **Liquid Fertiliser – Mopani District Municipality**

Smallholder farming, often of an informal nature and focus, is a fairly common activity in rural South Africa. A female farmer in this district produces vegetables for home consumption and for the local market. While she has received advisory services from the local department of agriculture extension, neither she nor her agricultural activities are registered with any statutory bodies.

A couple of years ago she was visited by the local extension officer whose role is to provide information and link local farmers to specialists. She informed him that with the increasing cost of inputs, she needed alternative ways to fertilise her crops. He suggested that she consider using the manure from her livestock and plant residues to produce a liquid fertiliser.

A crop specialist came to the farm and demonstrated how to make the liquid fertiliser by combining decomposed manure and plant residues with water and allowing this mixture to seep and decompose. Although liquid fertiliser is not strictly a new innovation, it was new to this farmer. She experimented with this technique and was amazed with the results. She saved money on fertiliser and was able to use the by-products from her farming activities that she had previously thrown away, to produce fertiliser.

She told friends and relatives about the liquid fertiliser and its benefits. Following a

growing interest from community members and friends, she hosted a course on manufacturing and applying the liquid fertiliser.

While this farming enterprise is informal, the farmer is linked to the formal agricultural sector through the local extension service. She informally diffused the innovation to other potential users who were also unaware of the innovation and its usefulness. Diffusion occurred through informal networks without the assistance of the primary diffuser, the extension service.

**There is no clear line between formal and informal innovations in the formal or informal sector.**

### **Implications**

These examples illustrate that rural areas of South Africa are conducting important innovation activities with the objective of either making a profit or improving the standard of living of the innovators and their local communities. There is no clear line between formal and informal innovations in the formal or informal sector. Local people, regardless of their formality, are looking at innovative ideas for their economic and social development. In understanding these innovation activities, one should not focus on their formality and informality but rather on their role and effectiveness in addressing local challenges.

Authors:

**Alexandra Mhula-Links**, researcher,  
**Tim Hart**, senior research manager,  
**Dr Peter Jacobs**, research specialist,  
*Economic Performance and Development (EPD) programme, HSRC*