



International Forum

*Unleashing Science, Technology and Innovation for Food and Nutrition Security
With special focus on Africa, Caribbean and the Pacific*

Developing a road map

15-17 October 2014

NH Rijnhotel Arnhem, The Netherlands

Forum International

*«Libérer la Science, la Technologie et l'innovation pour promouvoir la sécurité alimentaire et
nutritionnelle*

Avec, comme axe prioritaire, l'Afrique, Les Caraïbes et le Pacifique »

Élaborer une feuille de route

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INNOVATION SYSTEMS & Inclusive Development

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INNOVATION

- Innovation is the application of knowledge by firms (farms) and other actors that is **new** to them - irrespective of whether they are new to their competitors, their countries or the world.
- Innovation is **adding value to knowledge** for socio-economic development

INNOVATION TAKES MANY FORMS

- Radical changes at the **frontier** of knowledge
- A range **of small changes** that collectively can:
 - Modify Products and Processes
 - Reduce Costs/Increase Efficiency
 - Ensure Environmental Sustainability
- Where new technologies involve multiple knowledge bases, innovation frequently requires. **learning through collaboration in networks and consortia**

Innovation Systems Approaches

- Share an understanding of innovation as something more than simply the purchase of new machinery and equipment
- View innovation as a **socially embedded process** that involves changes along many dimensions – eg. production and consumption patterns, knowledge, skills, organizational forms
- Recognize the need to take account of the **established habits, practices and norms of the actors involved** -enterprises, governments, enterprises, , consumers, research organizations and many others whose participation supports the innovation process and enables 'transitions' to happen.

Building Innovative Capacity

In the last quarter of the 20th century, changes in the global pattern of production and competition had important consequences for competitiveness around the world. Three changes stood out.

1. Production became more knowledge-intensive across all sectors and not only the high-tech sectors such as ITCs and the bio-economy.
2. Gradually the growing knowledge-intensity of production extended to reshape a broad spectrum of traditional industries such as textiles and Export agriculture (flowers, food, wine)
3. Trade liberalization and the globalization of industry made it difficult for new comers from the developing world to compete without engaging in a process of innovation as the textile and wine industries show.

TEXTILES AND CLOTHING

A CLASSIC EXAMPLE



Learning to Innovate: The Wine Sector in Argentina

- Unlike Chile Argentina was late to react – little pull from the **domestic market**
- **Initial drivers** in quality and technology up-grading were **foreign investors** producing for export. This initially led to the **abandonment of local grape varieties** and the planting of European varieties
- Had the industry continued along this path it probably would not have become as dynamic and domestically innovative as currently is
- The development of **local universities & linkages** became part of the learning and knowledge exchange infrastructure that led to a **new wave of innovation**

Making Transitions

Transitions have been extensively discussed in the Innovation literature - in the past with regard to mobility, --the advent of trains and cars, or the changes brought about by ICTs .

More recently the notion of a transition has been applied to the process of change in agriculture. From this perspective agriculture becomes less a part of the problem, as the earlier development literature believed, and more a **part of today's solution** as the biofuel sector illustrates.

RETHINKING BIOFUELS FROM A Multi-goal perspective

Biofuels have been **praised** as a means to provide energy and reduce greenhouse gas emissions, and **criticized** for contributing to the destruction of tropical forests & competing with food crops for the use of agricultural land. **Jatropha** is an important feedstock for biofuels because it can grow on marginal land and in arid environments unsuitable for food crops (UNEP, 2009). It is also a good candidate for small holder production

Rethinking Biofuels – Multi goal

In 2007, rather than rely on imported diesel fuel for a future off grid generator, the villagers of Garalo, Mal chose to plant Jatropha on 440 hectares as part of a multi-goal project to stimulate rural development by:

- providing electricity for lighting, refrigeration, welding & agricultural processing machinery for use by businesses, workshops, health services, schools,
- reducing the cost of the village water pumping systems by replacing the diesel genset then in use with electricity from a local mini-grid they planed to build. This grid now has over 250 paying clients.

A Participatory Approach

Much of the **success** of this project lies with the farmers who **played an important role in the decision to plant jatropha and in the design of the project.**

They chose to intercrop Jatropha and local food crops such as maize, sorghum and beans – thus dealing with the assumed need to choose between food and fuel.

They also developed and sustained close links to research Institutes relatively nearby and this has led to considerable **follow-up experimentation and local learning** as well as improved methods of intercropping.

The Limits of Jatropha

Up scaling the smallholder model for large-scale production of biodiesel fuel for the domestic market, and even more so for export can have **unexpected impacts on inclusive development**

➤ First, the assumption that jatropha is a low cost, low-input crop that grows virtually by itself is problematic in the context of **upscaling**. Research in India shows that the price of jatropha depends on increasing the yields, which in turn requires **improved seeds, water and fertilizing** (Altenburg et.al.2008).

Failure to reach anticipated yield levels has led to the abandonment of a number of joint ventures in India (Dogbevi,2009a:2006). Similar problems have emerged in Ghana.

➤ Second, movement towards **mass market and export activities** requires a quite different management and often ownership model that increases **uncertainties** associated with global pricing trends and limits the role Jatropha can play as a driver of local development, especially for small holders.

The role of Dialogues

- Until recently, dialogues did not feature **centrally in policymaking or project planning**. Although they relate to the broader set of habits, practices and norms that affect the transition process, they were not well established practices.
- Instead, the common approach involved a top-down linear process in which the flows of knowledge and information were driven by governments , research or, business. These were of two sorts: Communication and Consultation.

The role of Dialogues (2)

- **communication** is the transfer of information through the distribution of material, awareness - raising campaigns and formal training programs,
- **consultation– involves** focus groups and stakeholder meetings that give the impression of being dialogues but in fact, they have pre-established boundaries that provide little opportunity for those consulted to express interests, needs or preferences not already on the agenda.
- In contrast, **interactive dialogue processes** offer room for the articulation of a broad range of views, interests, preferences and needs that are **essential** for confidence and consensus building in transition processes.

The role of Dialogues

- dialogues can play a role in developing and institutionalizing processes of working together and joint problem solving.
- They also open channels for innovative ways to deal with problems.
- By recognizing the **legitimacy** of **local** concerns, interests, and needs, they strengthen **confidence building measures** that are supportive of the change process.

Designing Policies for Transitions

- Understand the habits and practices of actors in the system. This is essential.
- Adopt a **long term, multi-goal**, systems perspective in the development of policies for transitions can open options for inclusive development.
- **Policy learning** matters: build learning and **innovation strategies** into policies from the outset to ensure flexibility and a continuous process of feedback in all projects and programs.

THANK YOU