



INNOVATION AND MARKET CHALLENGES: THINKING BEYOND TECHNOLOGY

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What is an innovation?

❖ Assumed linear path (invention, design, commercialization):

- Scientists and companies invent, with state investment through R&D funding (patent registration)
- The private sector commercializes and develops products
- The public sector distributes the benefits to all people (prevent poverty), extension diffuses the new technologies
- The State manages environmental and social impacts of technology and innovation
- Civil Society is a watchdog
- People are consumers, producers, employees and voters (but not innovators).

❖ BUT ... significant evidence of multi-actor networked paths:

- user innovation (von Hippel); co-invention (Malerba);
- open innovation (Chesbrough); open source (Raymond)
- participatory design (Schuler, Namioka), community innovation (Oost)
- upstream engagement (Fischer) mid-stream modulation (Fischer), Constructive Technology Assessment (Rip et al.)
- cooperative research (EC RTD); democratising innovation (Felt et al)
- Responsible innovation (Guston), responsible research and innovation (Von Schomberg, McNaughten, Owen, Stilgoe)
- social innovation (Stirling), grassroots innovation (Smith)

What is innovation?

Innovative uses of old technologies?



Innovation is a collective process – not only a new technology!

- ❖ An innovation is a journey (Van de Ven et al. 1999)
- ❖ “An innovation occurs when new ideas, new technical devices or new forms of organisation meet their users” (Joly 2011).
- ❖ “Innovation is not simply a technology (or a technical object), it must be the reorganization of institutions, organizations, value chains, businesses to enable actors to innovate on their own terms” (Felt et al., 2007)

EUROPEAN COMMISSION

TAKING EUROPEAN KNOWLEDGE SOCIETY SERIOUSLY

Report of the Expert Group on Science and Governance to the
Science, Economy and Society Directorate,
Directorate-General for Research, European Commission

Ulrike Felt (rapporteur)

Brian Wynne (chairman)

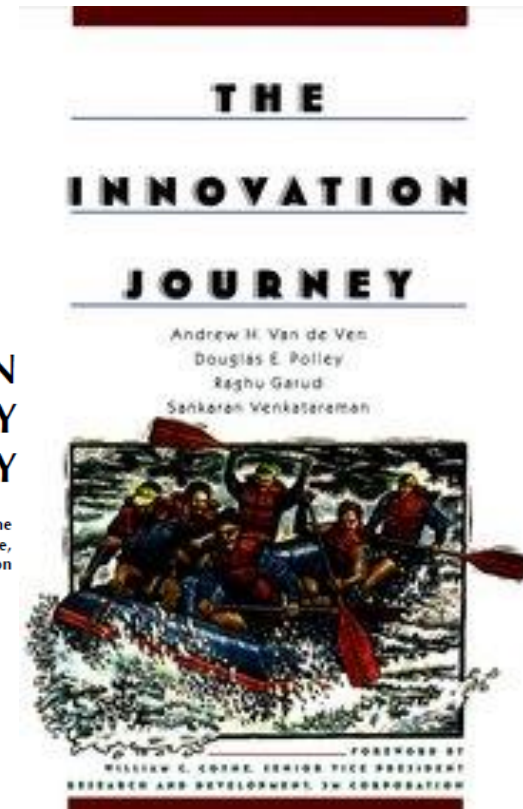
Members of the Expert group:
Michel Callon, Maria Eduarda Gonçalves, Sheila Jasanoff,
Maria Jepsen, Pierre-Benoît Joly, Zdenek Konopasek, Stefan May,
Claudia Neubauer, Arne Rip, Karen Siune, Andy Stirling,
Mariachiara Tallacchini



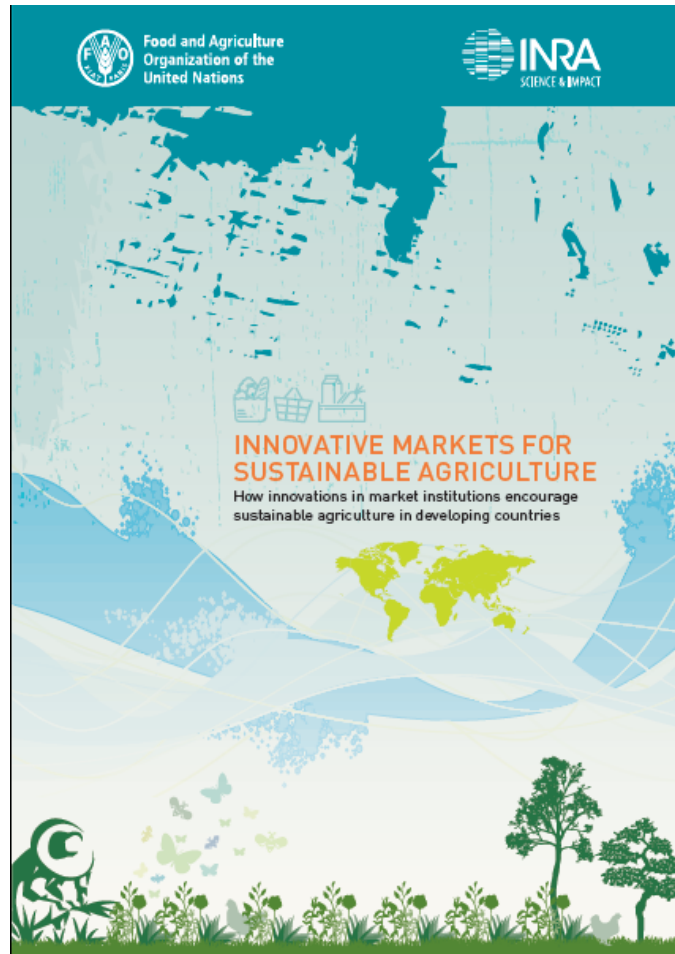
2007

Directorate-General for Research
Science, Economy and Society

EUR 22700



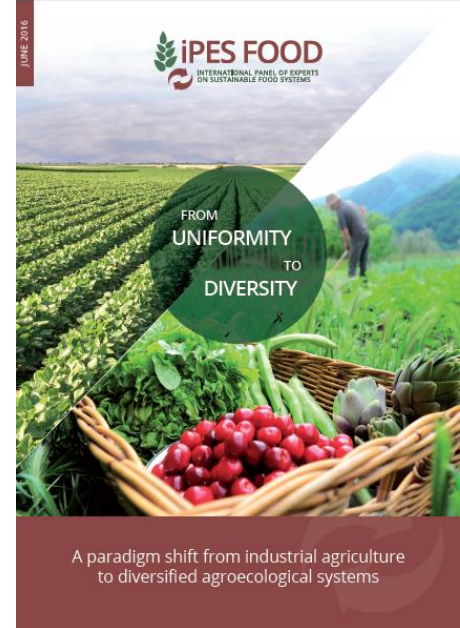
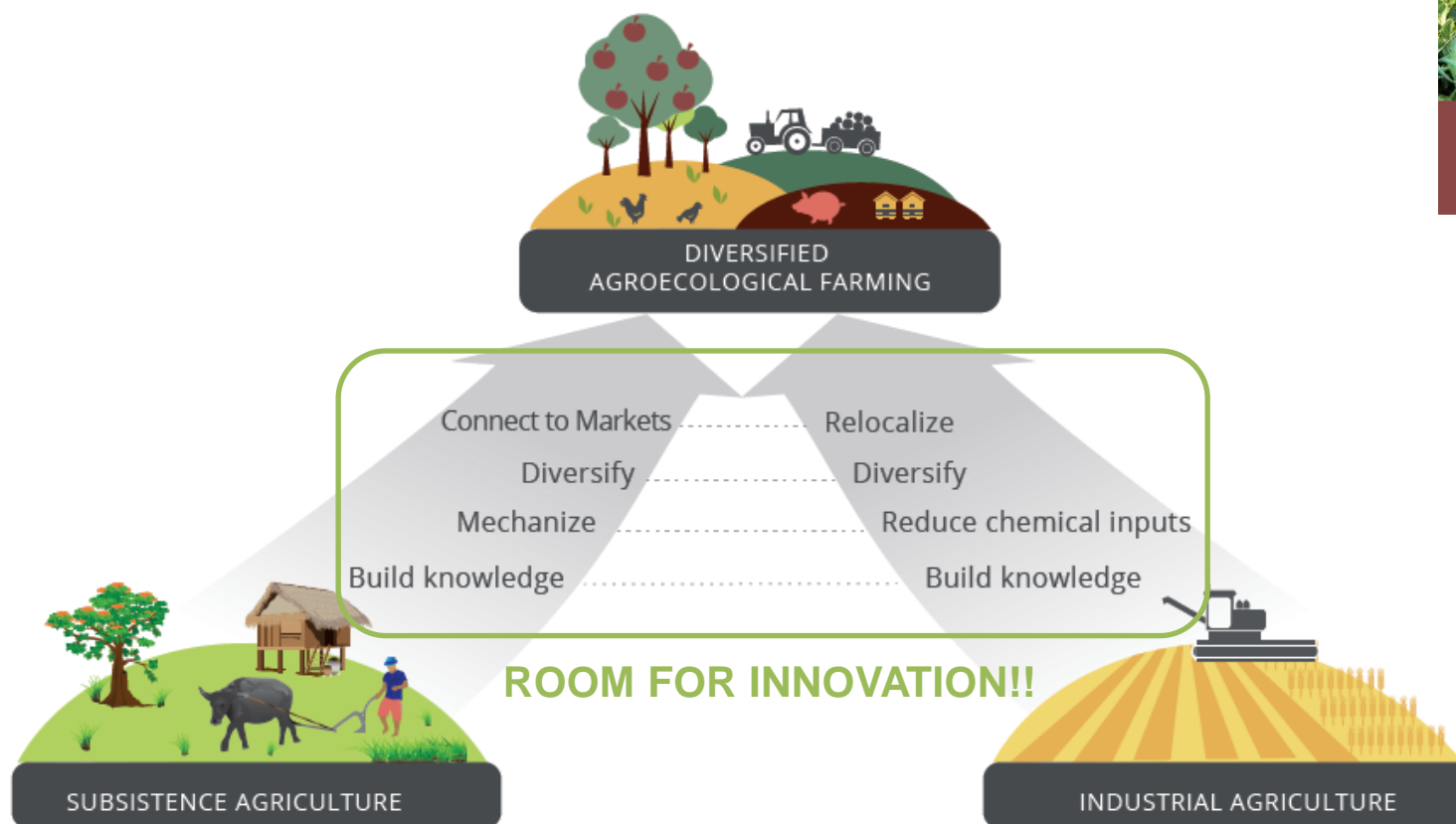
The linkages between innovations and markets – not only commercialisation of new products



- ❖ Markets are : “the collective devices that allow compromises to be reached, not only on the nature of goods to produce and distribute but also on the value to be given to them” (Callon and Muniesa, 2005).
- ❖ Re-organization of rules and re-allocation of responsibilities between actors provides space for innovation through markets.
- ❖ Institutional Innovations are new situations, not necessarily new knowledge (or technologies).

The agroecological transition challenge

FIGURE 2 - TRANSITIONING FROM DIFFERENT STARTING POINTS



Core challenges that can provide opportunities for innovation

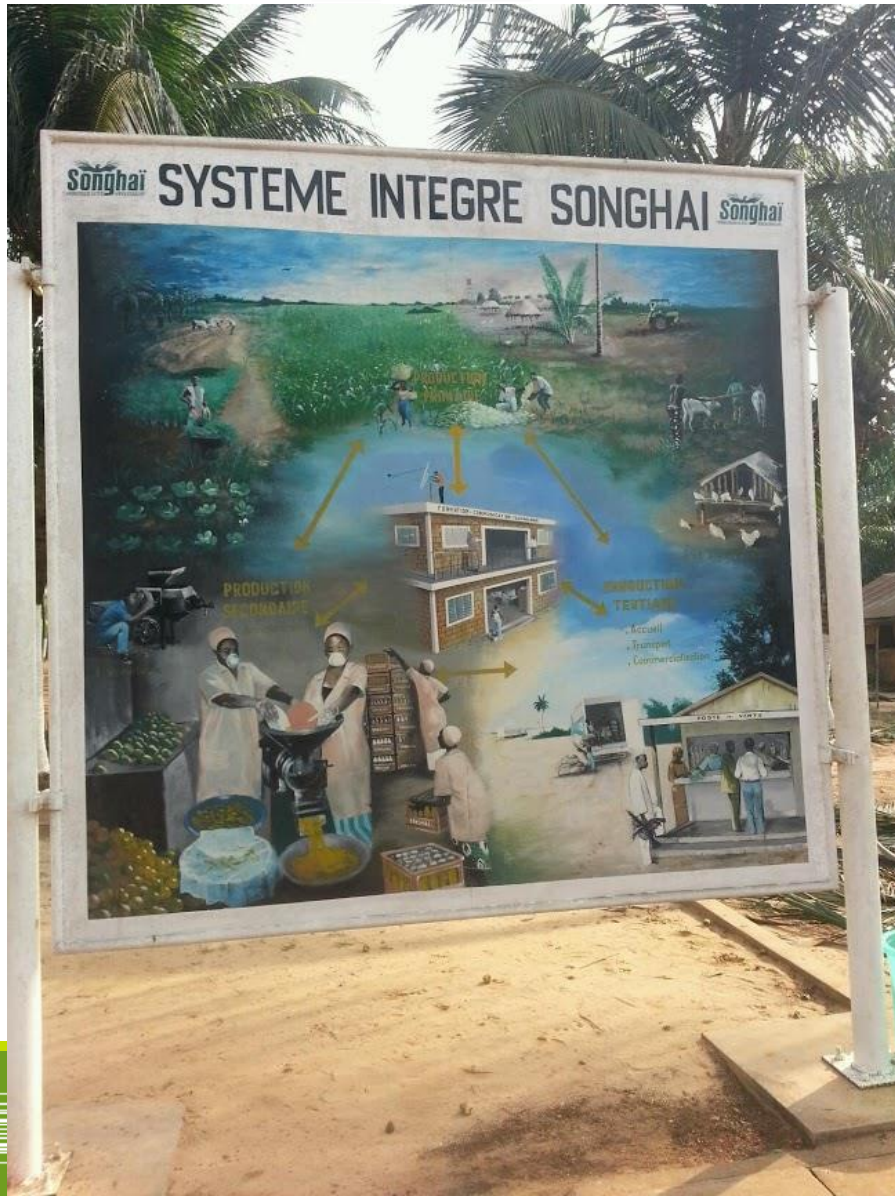
- ❖ Gaining access to sustainable inputs
- ❖ Satisfying consumer demand in terms of quantity and availability all year long
- ❖ Providing quality guarantees to consumers
- ❖ Finding the right balance between costs and prices
- ❖ Strengthening the capacity of farmers both in terms of sustainable farming practices and in terms of market knowledge because improving the ability to negotiate value is fundamental
- ❖ How to make these systems sustainable and attractive to the next generation?

Connecting to markets and relocating...

Markets for inputs

Inputs	Procurement channel	Benefits
Seeds	Agro-dealer	High seed quality (germination)
	Own production	Reduction of production costs
	Farmer exchange	Availability
Fertilizer (compost, manure, Effective Microorganisms)	Own production	Closed production cycles
	Farmer exchange	“High quality, low price, within short distance”
	Community network	Trust in the product quality
Animal Feed/Fodder	Own production	Less costly and accessible
	Local farmer	Availability
	Community network	Know it is organic
Post-harvest materials	Agro-dealer	Good transport
	Local farmer/supplier	Availability
	Importer	Availability and better price

Integrated production systems and the creation of local input supply systems



- ❖ Youth training centre
- ❖ Integrated production model (crop, livestock, aquaculture and biogas production)
- ❖ 5 regional hubs (training, production, processing, services) that sell inputs (EM, seeds, biorepellents) and buy products from ex-trainees
- ❖ 54% of the value of finished products was internal to the network and 46% constituted product sales with a value of US\$ 7,040,540, of which the off-farm sales of finished products accounted for US\$ 2,579,830 in 2014

Turning waste into inputs

- ❖ 1989, California law required 50% of waste to be diverted from landfills
- ❖ In 2008, San Francisco reached a landfill diversion rate of 77 percent, the highest of any city in the United States.
- ❖ Jepson Prairie Organics, a subsidiary of Recology makes four compost blends for more than 200 vineyards in Northern California who buy the blends and use them to feed the soil.
- ❖ Recology, Inc. - Owned 100 percent by its employees.



Small-scale agricultural service companies

Un drone pour protéger ses parcelles agricoles

Morbihan - Publié le 07/07/2016 à 02:43

écouter



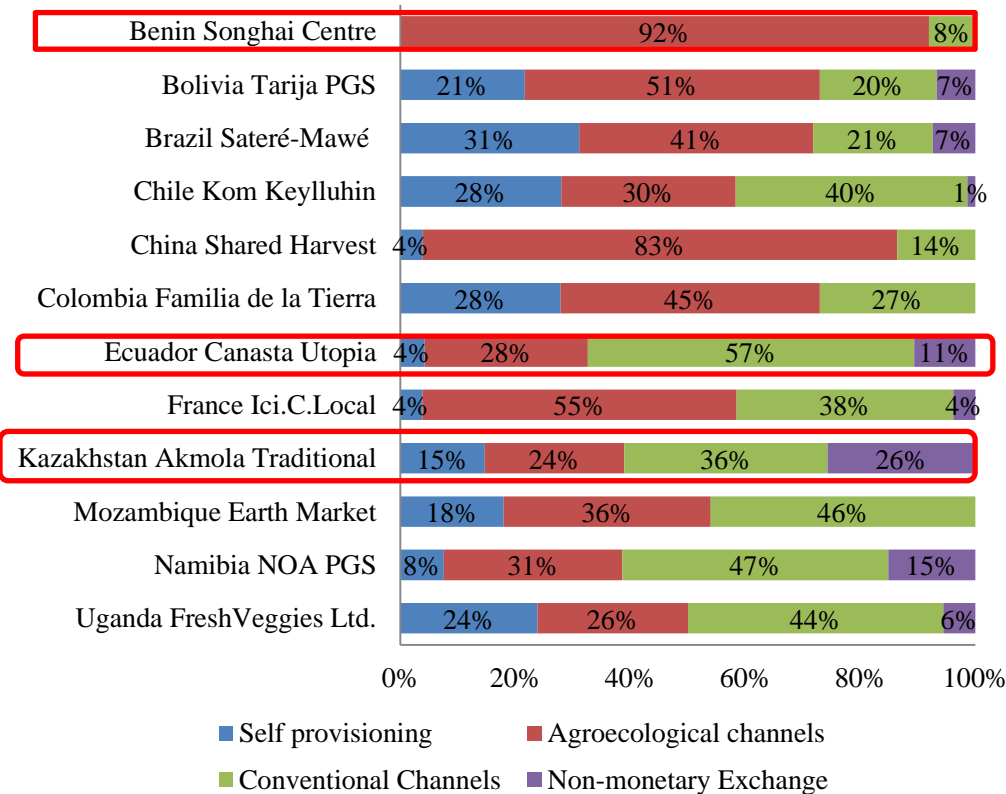
<http://www.ouest-france.fr/bretagne/morbihan/un-drone-pour-protoger-ses-parcelles-agricoles-4357375>

- ❖ Creation of small-scale local service companies by youth who are competent in ITC and Drone technology
- ❖ Example of Agri Load
 - 2 800 eggs of natural predators are deposited throughout the fields. They live for 3 days and will eat the larvae of the corn borer.
 - Cost of the operation: 55€/ha
 - “Same price as a powdered agrochemical product, but without the waste of time.”

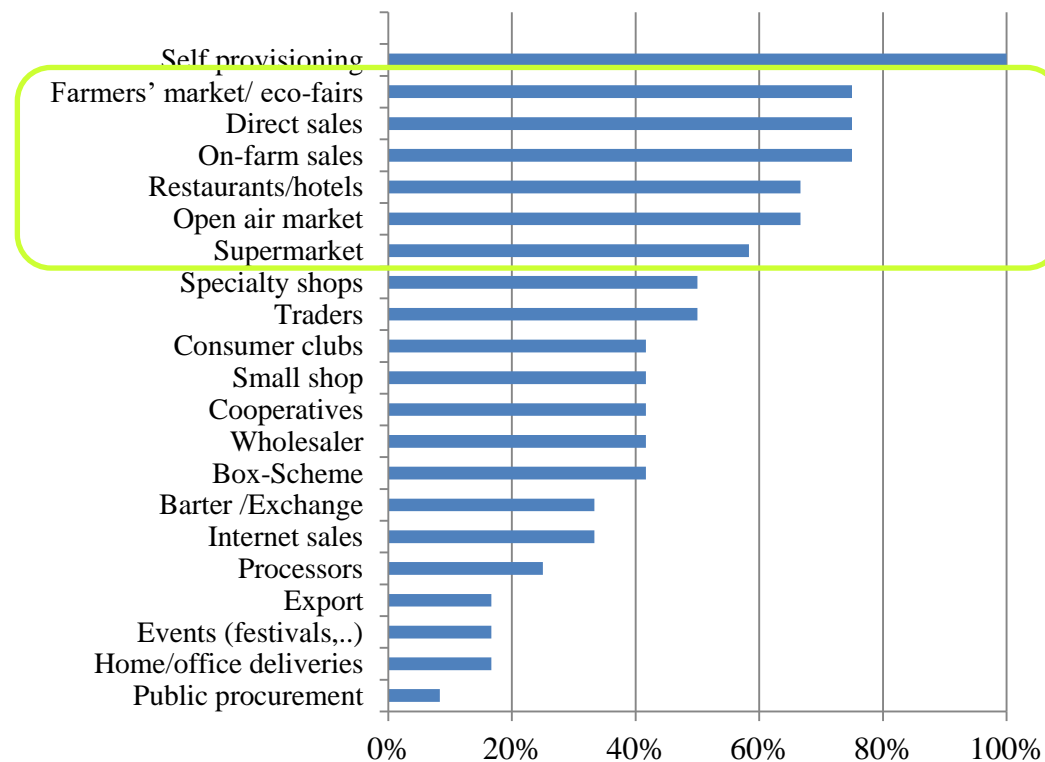
Connecting to markets and relocalizing...

Markets for outputs (products)

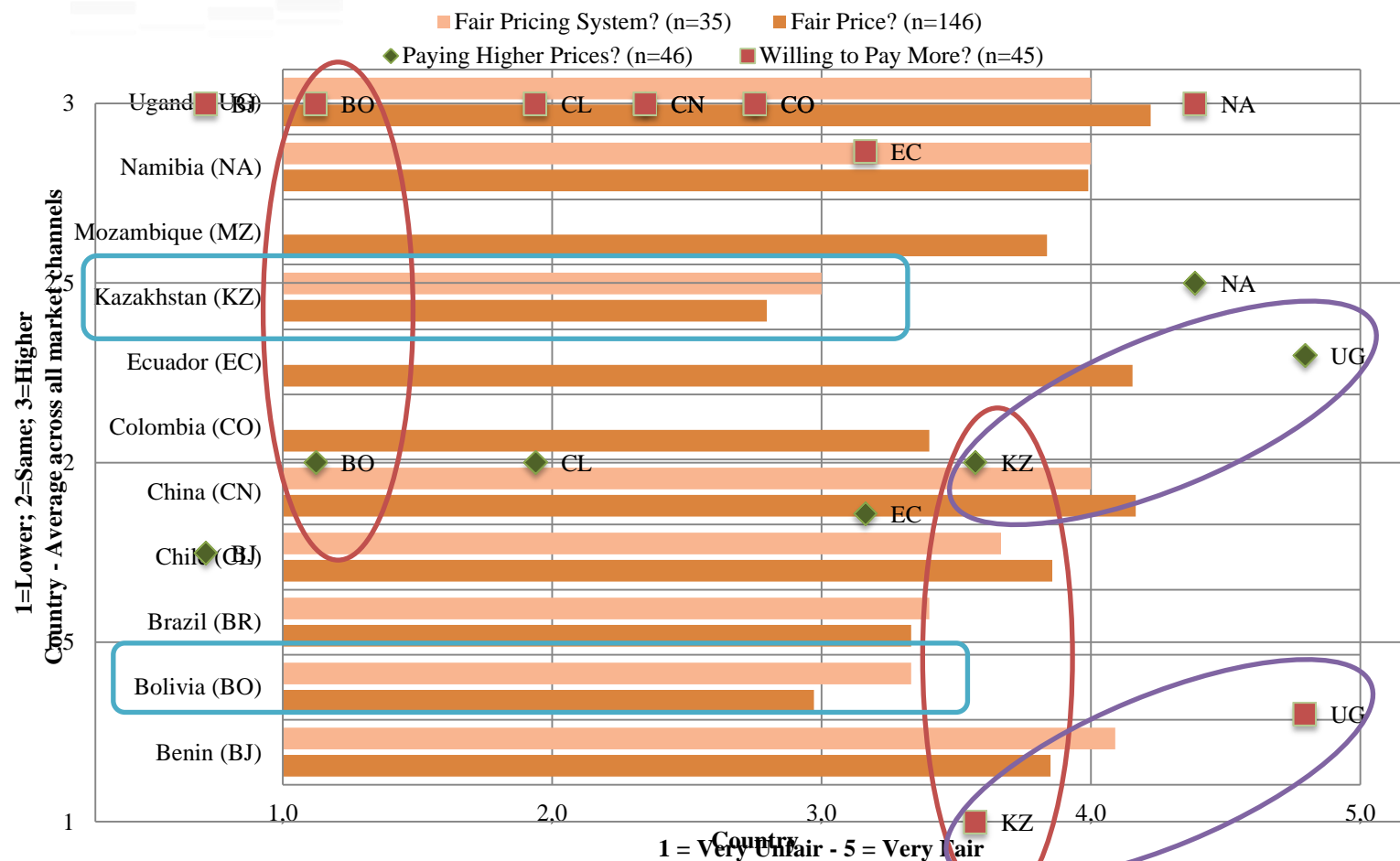
Diversity of exchanges



Diversity of Agroecological Channels



Valuing products: *Are prices fair?*



New labeling schemes in Farmers' markets

- ❖ National random survey in 2013, 42% purchased a product in a 'circuit court' during the preceeding month, with a food basket worth 25€/week

<http://www.gret.org/2014/06/circuits-courts-qui-pensent-les-francais/>

- ❖ Research-Municipality-Producer-Consumer led initiative
- ❖ Labels for distance
- ❖ Reduced competition between producers



CHALLENGES

« La Ruche qui dit Oui »

"Let's unite to buy the best products from the farmers and artisans of our regions."



KEY FACTS

Created in 2011.

Corporation (with "social enterprise" status).

800+ Ruches in Europe, mostly France (729). 126 Ruches in PMR.

Ruche-Mama platform: 50+ employees (mainly IT and development).

Franchise system: decentralized network of auto-entrepreneurs each manage one or several Ruches.

Each Ruche must follow platform specifications (e.g. Ruche opening conditioned on appropriate product diversity).

Maximum distance < 250 km.

Source: R. Stephens and M. Barbier (INRA)

LA FERME DE BRIANTE
COLOMBIERS, ORNE

JÉSUS LE COGUIC
Céréalier & Maraîcher depuis 1993

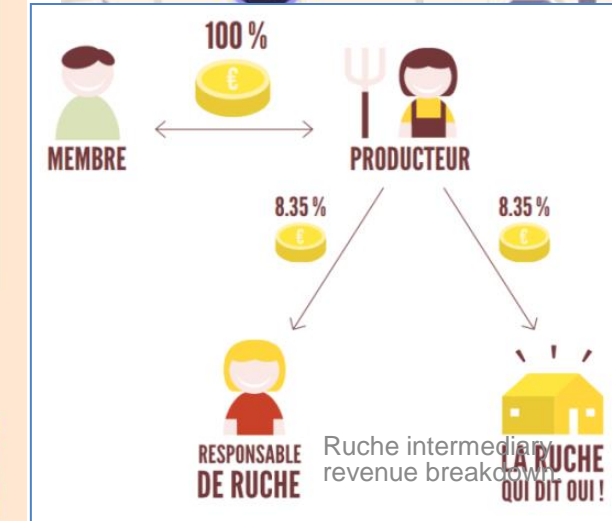
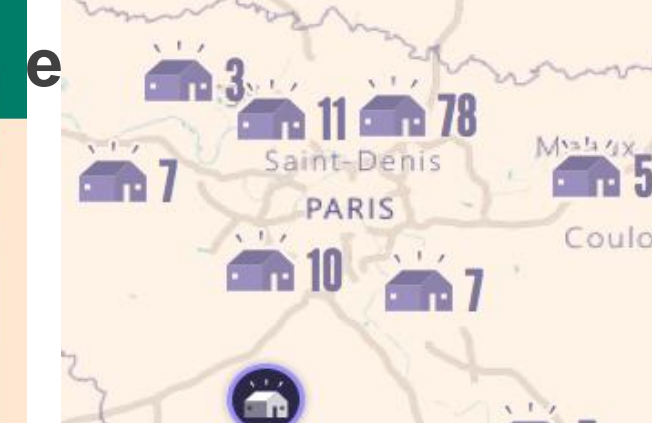
Tous deux issus de familles convaincus par les bienfaits de l'agriculture biologique « pour la planète et la santé », nous avons repris la ferme en 1993 et depuis, au rythme de nos idées, nous développons, inventons...

Nous sommes passionnés et pouvons

LES 13 PRODUITS DISPONIBLES

Voici les produits que propose La Ferme de Briante actuellement.

BETTERAVE BIO 500 g : 1,60 € 3,20 €	CAROTTES BIO 500 g : 1,30 € 2,60 €	CHOU ROUGE BIO À LA PIÈCE 800 g : 3,00 € 2,50 € à 3,75 €	NAVET 500 g : 1,50 € 3,00 €
OIGNONS JAUNES 500 g : 1,50 € 3,00 €	POIREAUX 500 g : 1,50 € 3,00 €	POMMES DE TERRE 1 kg : 2,80 € 2,80 €	RADIS NOIRS 1 kg : 3,00 € 3,00 €
RADIS NOIRS À LA PIÈCE (ENV. 300G) 300 g : 1,20 € 4,00 €	FARINE DE BLÉ 1 kg : 2,00 € 2,00 €	FARINE EPEAUTRE BIO 1 kg : 3,30 € 3,30 €	FARINE SARRASIN 1 kg : 3,30 € 3,30 €



Map centered around Paris shows 127 "ruches" (food assemblies).

Linking gourmet cuisine and tradition

- ❖ Familia de la Tierra in Bogotá, Colombia
- ❖ Direct sourcing between local agroecological farmers and a network of 17 gourmet restaurants
- ❖ Integration of 'traditional foods' into the culinary school curriculum
- ❖ Collaboration between the National University, Psychiatric Hospital, producers, the Culinary School and Restaurants to rehabilitate 'lost' native varieties (beans, yacón)



Community supported agriculture – multi-functional innovation

- ❖ Brasso Seco Tourism Action Committee
- ❖ Began with Bird Watching – now a vibrant agri-tourism community
 - Continuous investment, new ideas, new products, new events in order to value old traditions
- ❖ Bringing the market into the community



TOP: STOP AND STARE BRASSO SECO NATURE WALK
MIDDLE: COFFEE GRINDING DEMO
BOTTOM: AD FOR INDIGENOUS FOOD FESTIVAL 2011

Public procurement for local agroecological food

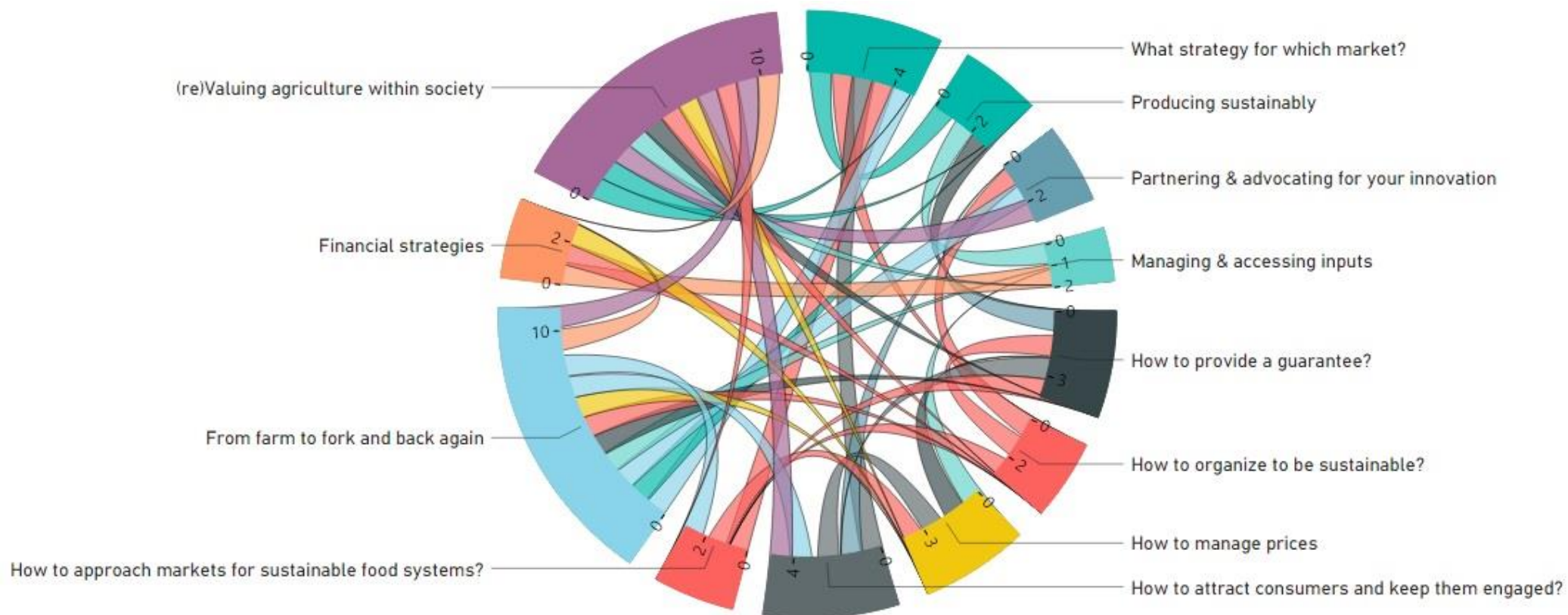
- ❖ National regulation for Ecologic Agriculture
 - 2006 - Export = 3PC, Domestic = PGS
 - Registration with Food Safety Authority
- ❖ School Breakfast
 - Camelidos/Quinoa production system
 - Local, traditional products
 - PGS as the registration mechanism
 - Direct procurement from local farm families



Closing the circle – innovating through markets in networks

- ❖ Agroecological innovation is about picturing where you are in your agroecosystem and figuring out how to make changes in your environment (socio-technical, economic and natural) in order to ensure its sustainability.
- ❖ We need to be able to imagine this in order to close the circle - we need to enable actors to make changes in their systems from different vantage points
- ❖ A circular economy is not only the idea of a local, closed or protected system – but it is the facilitation of interactions that enable the knowledge, goods and services to circulate within networks of actors and markets so that all resources are used to the most sustainable extent possible

How to innovate in food systems transitions?



The 6 (Re)s of policy support that can (re)Value agroecology

- ❖ **Recognize** existing agroecological markets by facilitating the registration of agroecological farmers with trade and food safety authorities according to appropriate standards
- ❖ **Revise** input subsidy schemes to include agroecological and biological inputs (or remove subsidies altogether) and provide financial incentives for creating small-scale agro-enterprises
- ❖ **Reform** research and extension programs in order to include agroecology and enable more flexible collaboration and experimentation with producers, private and civic actors
- ❖ **Reinvest** in agriculture through public procurement from agroecological producers by adapting the procurement protocols to the local realities of agroecological production (e.g., informal trading relations)
- ❖ **Recreate** public spaces for agroecology by providing public facilities that can be used to host farmers' markets, fairs and festivals for agroecology
- ❖ **Research**, via participatory methods, the innovative markets for agroecology and sustainable agriculture in order to better understand how they contribute to Sustainable Agriculture and Food Systems



« In travelling to 'unpredictable' places, an object that isn't too rigorously bounded, that doesn't impose itself but tries to serve, that is adaptable, flexible and responsive – in short, a fluid object – may well prove to be stronger than one which is firm »

(de Laet, M., & Mol, A. 2000, 226)

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