

F@RMLETTER

The E-magazine of the World's Farmers
Issue n°25, March 2014



E-Magazine

Editorial	02
Farmellaneous	04
Best Practice	14
Farmatory	20
News & Events	23

Editorial Board

Editor

Marco Marzano de Marinis

Deputy Editor

Anette Engelund Friis

Assistant Editor

Paul Bodenham

Editorial Team

Alessandra Giuliani

Simona Mazzuca

Luisa Volpe

Graphic Project

Maura Casaburi

Art Direction

Pocomalo

Subscribe to

the monthly Farmletter

by sending an e-mail to

info@wfo-oma.org

World Farmers' Organisation

via del Tritone, 102 - 00187 Roma

TEL +39 06 42 74 11 58

MAIL info@wfo-oma.org

Mark Holderness,
*Executive Secretary,
Global Forum on Agricultural Research (GFAR), Rome*



Farmers at the centre of agricultural innovation: making the system changes required

A

Agriculture faces many challenges over the decades to come. Innovations and advances in varieties, fertilizers and many other areas have meant that production has kept pace with population growth, but we know we will need to produce more, and more nutritious, food for a rapidly growing population, and do so in

ways that are both sustainable and profitable – all the time facing major new challenges such as climate change and invasive pests.

Farmers around the world require innovative practices, tools and technologies to meet these complex needs. However, public trust in agricultural research has also plummeted as societies have become disconnected from the source of their food. The Global Forum on Agricultural Research (GFAR) is the unique mechanism bringing together all those concerned with agricultural knowledge, innovation and research, to shape a new future for agriculture and in particular smallholder farmers.

Past agricultural research has often assumed a linear flow of technologies from researcher to farmer. However, many technologies remain 'on the shelf' due to their inaccessibility, or because the research involved took too little account of the risks faced by farmers in changing their systems. We need to better recognise innovation that comes from farmers themselves. Sustainable development requires that we must value and capitalise on the knowledge of both formal research and farmer innovation and better understand the basis by which each trusts its own innovation.

Agricultural research is essential, but not in itself sufficient to change lives and livelihoods. We also need to create the right supporting inputs and policies for the effective use of new knowledge and break through the barriers of control and access that stop innovations reaching and benefiting the farmers they are intended to serve.

So what must happen if farmers are to truly benefit from new knowledge and approaches?

GFAR works to trigger change and promote farmer-centred innovations around the world. Farmers must be directly empowered by innovation systems that are accountable to farmers as their clients, as well as to taxpayers.

Through the Global Conference on Agricultural Research for Development (GCARD) and the resultant GCARD Roadmap for change, thousands of stakeholders have set out the most important changes required:

Defining future needs and common goals together; not just projecting what kinds of agricultural needs may arise, but also deciding what kind of world we would like to see in future and investing our efforts together towards achieving those aims. Farmers and communities must have more say in what they want of agricultural systems in the future – GFAR is promoting 'grassroots foresight' actions with farmers organizations around the world, reconnecting research, farmers and societies to shape the most effective pathways towards desired rural futures – and for understanding the technologies and innovations required to achieve these.

Equitable partnerships are essential for success, with all involved truly sharing common objectives from the very start, and ensuring that poorer farmers are not left behind by advances in agriculture and are able to profit from innovations appropriate to their particular circumstances.

Meeting future agriculture needs requires a three-fold increase in national agricultural research and extension investments over the next 20 years. At present, most countries have limited capacities in agricultural innovation and are seriously under-investing in agricultural research, education, extension and enterprise.

New capacities are required at all levels to generate, access and use agricultural innovations and to empower farmers with the knowledge needed for success and to grow out of poverty. As well as production, we need to innovate in creating the environment enabling change, such as by credit, insurance, post-harvest value addition and access to markets, as well as the exciting new opportunities offered by ICTs.

The face of farming is changing fast. Almost half the world's farmers are now women, yet women receive only 5% of technical assistance. Agricultural innovation systems have only poorly addressed the needs of women farmers, and we need more emphasis on labour and energy saving, nutrition and value addition, not just productivity gains alone. It is vital that young people come to see agriculture as offering them opportunity and prosperity and we must transform our education systems to highlight new enterprise opportunities and skills to attract young people back into agriculture.

How do we work better together towards these objectives and hold each other to account for their achievement? The Global Forum brings together diverse voices and collective actions through inclusive, bottom-up processes, fostering rapid actions and working to ensure agricultural innovation delivers its intended development impact. It

provides the interactive space in which leaders, advocates and stakeholders spanning the spectrum between farming and research, including farmers' organizations, NGOs, the private sector, international research centers and the donor community, can together consider agriculture's challenges and future. We welcome an even stronger voice from farmers around the world, building from your needs and your demands towards changes required.

GFAR works to bring convergence of voices on future needs, foster innovative and equitable partnerships, reshape our institutions and their interactions and share knowledge for all.

Through our conferences, online fora, and catalysing actions of delivery agencies on the ground, stakeholders in GFAR work together to think not just about technologies, innovation and knowledge, but also who they are benefiting. GFAR offers farmers a direct say in agricultural innovation. As WFO President Robert Carlson said when representing Farmers' Organizations at the 2012 GCARD2:

"Farmers want research. They know it's important, especially in this time of climate change; that they need help adjusting to variations in climates, pests, increased demand for food. They know they need research, they want research."

Farmers are at the centre of thinking in GFAR and we welcome your growing involvement in GFAR processes, as will be discussed at the WFO General Assembly in Argentina this month.

SMALL, NETWORKED AND ETHICAL: INNOVATION IN THE NEW FOOD ECONOMY

Adam Erik Arvidsson,

Associate Professor of Sociology at the University of Milano and Scientific director at RuralHub, centre for innovation in the New Rural Economy

The food economy is changing. There used to be two major actors: Large, multinational food corporations on the one hand, and small traditional farms on the other. Now a third actor is affirming itself. All across the world, in Europe, in the US, in Asia and South America young educated people are going back to the land and rediscovering food production. Some of this is happening in the countryside, but some of it is also happening in cities as Urban Gardening and Urban Farming are hot and growing realities in declining industrial centred space. And while this movement might be marginal in absolute terms, it is growing very quickly in relative terms: Today the new food economy is the fastest growing sector of the US agricultural economy overall.

This new actor shares features with both its precedents. Like traditional farms, producers in the new food economy tend to be small in size. But unlike traditional farms they are open to and actively embracing innovation. Indeed like large food companies the new food economy is high tech and innovation intensive, and it shares an understanding that value rests with marketing and branding rather than with material production per se. But unlike the corporate food economy

innovation is not centralized, and rarely proprietary. Rather innovation tends to be centered around knowledge commons where knowledge, business models and organizational solutions are freely shared. This way the New Food economy has a lot in common with the traditional commons like water or fishing grounds that, as Elinor Ostrom showed in her Nobel price-winning work, have been a key component to the traditional rural economy for centuries. But rather than the material commons that Ostrom thought about, these innovation commons are mainly immaterial. Initiatives like Open Source Ecology puts the designs for cheap and effective agricultural machinery in the Open. Anyone can download the specifications for building a tractor that would cost a couple of thousand dollars in parts and labor, and anyone can contribute, up-loading their own improvements to available designs. This is called Open Hardware and it extends the principles developed in Free and Open Source Software in the 1990s to the design of material stuff. Another example is Arduino. Itself an Open Source Hardware project Arduino is a circuit board designed to mediate between computers and mechanical processes in a flexible and versatile way. Already established among interaction designers, Arduino is now being used massively in the New Food economy to implement advanced systems for irrigation control

or livestock management at a small scale and low cost. Moreover these solutions are shared online, anyone can use them and anyone can upload improvements. Along with seed banks, knowledge repositories that extend traditional know-how to global communities and Open Source courses and seminars the New Food Economy grows around a wealth of free and common knowledge resources.

But the knowledge commons are not just about technical innovation. In a similar way social innovation hubs and standardized templates like Business Model Generation allow for the sharing of business models and marketing recipes. Social media put the kinds of branding skills that previously required massive marketing budgets in the hands of small companies, allowing them to create direct contact with consumers, sometimes involving them in the production process themselves. (Some models within the US community based agriculture movement allow for consumers to pay for their produce by dedicating a couple of workdays to the farm, thus generating direct involvement as well as a communal experience.). Similarly alternative financial solutions are growing as small food producers make use of peer-to-peer lending and financing as well as, in some cases alternative currencies. (In Sardinia in Italy the alternative currency Sardex has been highly successful as an alternative to the euro in business-to-business transactions, thus allowing small companies to keep operating even in times when cash is scarce.)

This new innovation model is emerging right now, and it is difficult to say something definite about it in medias res. However a few key characteristics seem to emerge quite clearly

First the new food economy is small and networked. It consists of relatively small units that operate with low levels of capital and where yields per employee are relatively low. At the same time these units make use of advanced technical solutions, whether in terms of agricultural techniques or in terms of marketing, branding or business models. Such high tech/low capital solutions are possible as the new food economy is

organized around innovation commons where technical know how is free and, generally designed to be cheap to implement, and where new innovations are quickly shared in global networks.

Second the new food economy is a commons based economy. It consists of a number of small enterprises that operate at the margins of a knowledge commons and where most actors also contribute to developing those commons. This means that traditional notions of intellectual property are paralleled by alternative conceptions. Sometimes this takes the form of explicit licenses, as in the case of CopyLeft, but often, as in the case of traditional commons, the use of common resources are paired with ethical notions of stewardship and preservation.

Third, the new food economy is directed towards quality rather than quantity. Generally producers are interested in creating high quality produce rather than in maximizing yields. Such 'quality' can be defined in traditional terms, as when pig farmers in Marche in Italy rediscover breeds that have been distinct since the green revolution in the 1950s. But it can also be a matter of quality as a shared experience, as when community supported agriculture groups in the US

involve producers and consumers in face-to-face meets in order to create a common narrative of what quality food is, how it is grown, what it should taste like and how it can be consumed.

These three dimensions: low yield and high tech, commons based and quality-oriented are tied together by a different economic ethos. Actors in the new food economy are generally not motivated by profit maximization.

Rather they are generally quite content with achieving economic sustainability. Instead they are driven by values that have to do with realizing and maintaining a model of food production that combines ecological sustainability with an overcoming of the alienation between producer and consumer that is a necessary consequence of large scale modern food production.

What is more, these values are reinforced by the tight communitarian relations that form between producers and consumers, and between the stewards of a similar knowledge commons. This way the new food economy is an ethical economy, integrating a wide range of value concerns deeply at the heart of its very economic rationality.



INNOVATION WITHOUT FEAR

Santiago del Solar,
Agricultural producer,
Member of CREA (Consortios regionales
de experimentación agrícola)



FFor us, agricultural producers, risk has been a long standing friendship since farming began. We know very well that in a matter of just a few minutes, a crop can be ruined by a serious weather event, and that the result of an entire year of labour can be determined as much by the climate as by a sudden change in price quotations. Unforeseen events of this kind are generally beyond our control, although there are modern tools that allow us to mitigate their effects. However, we cannot deny that all these risks are inherent in the very nature of farming, and as such, we consider them as a part of our daily life.

Innovating with new technologies and new processes, and experimenting with new ideas in such an unstable setting is no an easy task for farmers. Why risk introducing new variables into an equation that already contains too many risks? If my parents and grandparents did things a certain way, why must I change that way? Sometimes, the status quo appears to be a safe heaven in which to take easy refuge.

As we all know, in every industry, those who innovate and succeed in their changes are those who progress, thrive in unstable settings and are more resistant to outside impacts.

Large enterprises invest millions in the research and development of new products and new organizational and working systems. They are willing to

run the risk of making mistakes and to try once again to find new alternatives to improve what they are already doing. They know that failing to innovate and clinging to the past are the way to disappear little by little.

However, in the case of farmers, for whom there is almost no margin for error and the financial possibilities of an individual producer are not so great as to permit these errors, how is innovation possible? Failing at the attempt can be quite costly and a stumble sometimes means having to give up the activity altogether. However, on the other hand, we know that continuing in such a competitive world to do things the same way without improving the productivity and sustainability of farming strategies will sooner or later bring us to failure.

There are countries where, to a greater or smaller degree, government bodies offer their support to producers, through technical and economic consulting, with the aim of incentivizing innovation. But this is not always achieved, and in many cases farmers are at the mercy of fate and have to imagine other ways to find solutions to their own problems on their own.

On the other hand, in innovating by applying new ideas and conceptually changing our way of doing things, we create no less of an impact and outcomes. The concept of “creative destruction” (Joseph Schumpeter) is known both for the positive effects caused by creativity itself, and for the amount of resistance and negative impacts produced around it as innovation progresses, leaving other forms, other habits, other technologies, and, in certain cases, deeply rooted traditions behind.

When direct sowing began to spread like wildfire in Argentina, as this technology became another piece in a puzzle fitting in with such other precisely shaped pieces as innovations in genetics, the appearance of GMOs, new herbicides and the spread of the use of fertilizers, great and profound



changes took place. This revolution has also had its effects on other already pre-established activities, and even on customs deeply rooted in my country.

The passage from conventional cultivations to direct sowing has had many impacts; during the nineties, there was practically the impression of having stirred up a hornet's nest. We began to see how permanent crop rotation displaced pastures where calves had earlier grazed. And it was not merely a change in the landscape, but a total change in the economic and social matrix of the Argentine countryside. New demands for work arose, while others faded. New industries arose (such as metalworking), and others have had to seek new niches in order to be able to go on, as in the case of fattening calves, which to a large degree has gone from traditional grazing to feedlots.

The blizzard of new technologies, new machinery, innovating ideas, genetics, software, commercial tools, and so on, may be oppressive for a family-run farm. It is highly difficult to separate and distinguish what truly responds to the particular needs of a given property, farm, or estate. And it is more than clear that we can't do it on our own. This is why there's nothing better than looking for a "Little help from my Friends."

As the Beatles were singing this song in the 1960s, in Argentina groups of producers were beginning to emerge

that, since that time, have played an extremely important role in farm production. These groups, formed of farms geographically close to one another, with an institutional organization and advised by independent technicians, meet in clusters of 8 to 12 farmers to exchange their own experiences. Collective intelligence and shared experiences founded upon an ordered method make it possible to exchange, trial, and learn based on relationships of trust created among the members. Research is translated into the attempt to create an outfit tailor-made for each field, each property, with the group's effort and dedication to every productive situation, family situation, and, in particular, economic situation.

In this type of organization, we can share the risk brought by innovation, thus shedding all fears as we advance

alongside our peers, while mitigating problems and difficulties, just as we share the costs of contracting independent technicians and advisors who help us choose the best technologies for each situation.

In this way, work is not just more pleasant, but it is also far more secure when we are called upon to innovate and live up to the challenges multiplying in our activities on a daily basis.

We are not just aware that we do not wish to fail as farmers, but we also bear the responsibility of being observed by more than 7 billion people who, every day, on their tables, need and enjoy the fruits of our labour and our innovation.



THE ROLE OF PLANT VARIETY PROTECTION (PVP) IN IMPROVING INCOMES FOR FARMERS AND GROWERS

Peter Button,

Vice Secretary-General, International Union for the Protection of New Varieties of Plants (UPOV)

Most countries and intergovernmental organizations which have introduced a plant variety protection (PVP) system have chosen to base their system on the UPOV Convention in order to provide an effective, internationally recognized system (see <http://www.upov.int/members/en/>).

The UPOV Convention provides the basis for UPOV members to encourage plant breeding by granting breeders of new plant varieties an intellectual property right: the breeder's right. The UPOV Convention specifies the acts that require the breeder's authorization in respect of the propagating material of a protected variety and, under certain conditions, in respect of the harvested material. The breeder's right means that the authorization of the breeder is

required to propagate the variety for commercial purposes.

UPOV has recently produced three publications (the Trilogy) that provide a perspective on how the UPOV system of plant variety protection can benefit agriculture and society as a whole (see http://www.upov.int/about/en/benefits_upov_system.html). Agriculture faces enormous challenges in achieving sustainable food security against a background of population growth and climate change. The Symposium on Plant Breeding for the Future (see http://www.upov.int/export/sites/upov/about/en/pdf/357E_2.pdf) recalled that scientific progress has long been key to meeting society's needs, and clearly demonstrated that accelerated scientific progress is necessary if agriculture is to meet our future needs. The Seminar on Plant Variety Protection and Technology Transfer (see http://www.upov.int/export/sites/upov/about/en/pdf/357E_3.pdf)

illustrated the critical role that plant variety protection plays in encouraging investment in plant breeding science and, equally important, in supporting investment in delivering the resultant technology to farmers in the form of plant varieties suited to their needs and to those of consumers. The importance of technology transfer in both the public and private sectors was highlighted, and examples shown of how the UPOV system has enabled those sectors to work together effectively.

The final event in the Trilogy, which is the focus of this paper, was the Symposium on the Benefits of Plant Variety Protection for Farmers and Growers (Symposium). The Symposium (http://www.upov.int/export/sites/upov/about/en/pdf/357E_4.pdf) demonstrated that plant variety protection provides farmers and growers with access to the best local and global varieties, as well as improved opportunities for them to



capture value in the production chain. New varieties are the key to improved livelihoods for farmers and to enabling farmers to provide sustainable agriculture that meets the needs of the whole of society.

BENEFITS OF PLANT VARIETY PROTECTION (PVP) FOR FARMERS AND GROWERS

Farmers and growers deliver the benefits of new varieties to society through reduced food cost, efficient

land use, high quality food, storability and a wide diversity of products. They deliver those benefits because they are the first beneficiaries of new varieties, which offer to them improved yields and profitability, resistance to pests and diseases, input efficiency and agronomic options that enable them to meet their own needs and those of consumers. In short, new varieties are their route to improved livelihoods.

The Key Note Speech at the Symposium, by Mr. Thor Gunnar

Kofoed, highlighted the importance of variety choice for farmers and growers (see Box 1). Farmers and growers rely on having a choice of varieties that are suited to their needs. However, a theoretical choice of varieties must be combined with information on variety performance and delivery of good quality planting material in order to provide farmers and growers with the best opportunity to add value to their produce.

BOX #01

Mr. Thor Gunnar Kofoed,
(Committee of Professional
Agricultural Organisations
(COPA) - General Committee
for Agricultural Cooperation
in the European Union
(COGECA) (Denmark)



"We have about 12 million farmers and farm workers as members of this umbrella organization and 36,000 cooperatives. We are dealing with organic farmers and conventional farmers, even farmers who want to grow genetically modified organisms (GMO) and seed producers, manufacturers, sugars, oilseed and protein crops, just to mention a few. If we look at the yields for cereals per hectare in Europe, we can see that we have had an increase in yields since 1960. One country that stands out is Denmark, which follows the trend of the rest of Europe; however, in the same period they have reduced the use of nitrogen by 50 per cent. They still have the same yields as the other countries, but they have reduced the use of pesticides by 30 per cent. One very important thing: they always use new varieties. Farmers need better varieties – this is the message to the breeders: you need to continue to produce better varieties. Farm-saved seed: the system for farm-saved seed must be simple and fair to both farmers and breeders and should contribute to the development of new, improved varieties that will increase farmers' incomes."



Mr. Oscar Stroschon, Sementes Produtiva (Brazil) illustrates how the introduction of PVP in Brazil enabled

him and other farmers in Brazil to have access to the new varieties that enabled the country to transform its

agricultural productivity (see Box 2).

BOX #02

Mr. Oscar Stroschon,
Sementes Produtiva (Brazil)



"I was born into a family of small farmers in the south of Brazil. I have seen the transition from subsistence agriculture, with the earth being ploughed using animals in my childhood, to large-scale production involving the use of highly-productive varieties, agricultural machinery and equipment, technology and biotechnological progress to grow economically-viable crops. Productivity, which I first of all consider to be directly linked to the impact of the 1997 Brazilian Law on the Protection of Crops (LPC), and the recognition of intellectual property encouraged breeders to increase the range of new varieties on offer. For example, on average, there was a 50 per cent increase in soya bean productivity, rising from 2,200 kilos per hectare (kg/ha) to 3,300 kg/ha. In 1996, there was an outbreak of "Stem Rust"; and 90 per cent of the planted area of the savannahs had been given over to a single variety susceptible to that disease. It was a disaster! Huge losses all along the chain. Faced with this situation, in 1997 the LPC was approved. Public and private companies were immediately encouraged to invest."

Delivery of varieties that are suited to the needs of farmers requires investment in breeding, but also investment in:

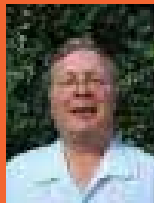
- researching the needs of farmers and growers in order to establish breeding goals

- assessing the performance of varieties
- providing information on variety performance to farmers and growers
- producing and delivering high quality planting material at the critical time

Plant Variety Protection has a crucial role to play in supporting that investment, as illustrated by Mr. Stephen Smith, Pioneer Hi-Bred International Inc. (see Box 3), and Mr. Vuyisile Phehane, Agricultural Research Council (South Africa) (see Box 4).

BOX #03

Mr. Stephen Smith,
Pioneer Hi-Bred International
Inc. (United States of
America)



"We have a huge diversity of farmer-customers from those with 1 hectare plots in China to 1,000 hectare farms in Iowa and to 5,000 hectare farms in Brazil. Nonetheless, across this diversity, all customers have one thing in common—each is looking for seed that will work for them and meet their needs; seed that will be a good investment for them and for their family. [...] To be successful, plant breeders must know the field environments of the customer. Breeding and product advancement takes place at the local level."



BOX #04

Mr. Vuyisile Phehane,
Agricultural Research Council
(ARC) (South Africa)



“As a public entity in South Africa, the ARC is obliged to ensure that the outcomes of its research and development initiatives are effectively disseminated. To this end, the ARC has adopted an approach for the transfer of technology, including new varieties with plant breeders’ rights, to both the commercial and resource-poor agricultural sector. Licensing of the transfer of varieties to smallholder producers is done in a manner aimed at ensuring maximum benefit to the recipients. The ARC has entered into a local licensing agreement for the commercialization of some of the ARC’s citrus varieties. One of the obligations is to ensure the participation of smallholder citrus producers in the commercialization value-chain. The estimated revenue accrued to wheat farmers who have licenses for the ARC’s varieties was R 36.7 million in 2011/12. Using a single ARC pear variety, the income accruable to licensees of this cultivar is estimated at R 138 million per annum, with the potential to create 1,260 farm worker jobs. Access to the ARC’s varieties has resulted in a profit of R 130,000 per harvest per smallholder farmer from sales of orange-fleshed sweet potato on the informal market only. The potential for sales is greater as the ARC concludes supply contracts with retail stores.”

OPPORTUNITIES FOR ADDED VALUE

In addition to encouraging the development of new varieties of plants that respond to the needs of farmers

and growers, PVP also provides opportunities for farmers and growers to add value to their produce. The experience of the Fresh Produce Exporters Association of Kenya FPEAK in vegetable and flower production

illustrates the role of PVP in enabling smallholder participation in the value chain, as reported by Mr. Stephen Mbithi, (FPEAK) (see Box 5)

BOX #05

Mr. Stephen Mbithi,
Fresh Produce Exporters
Association of Kenya (FPEAK)



“For Kenya, revenue from horticultural exports of 1 billion US dollars is a considerable economic factor. In Kenya, horticulture or fresh produce provides employment for about 4.4 million people, directly or indirectly. That amounts to 11 per cent of the working population. Fruit and vegetable growing is essentially a matter for smallholders. They contribute 70 per cent to the overall production. Those farmers have one or two acres. It is just obvious to the farmer that half an acre of tomatoes feeds his family, and the surplus money pays for medical care and for the school fees of his children much better than half an acre of cassava. [Intellectual Property Rights] IPRs in developing countries for smallholder farmers are extremely important. It is most important to understand that smallholder farmers are able to integrate in the value chain of any market in the world. They need technologies and varieties that come through IPRs. In a country such as Kenya, which has signed up to IP conventions, it was with a view to promoting investment by breeders through protection of their rights. The horticultural sector appreciates that: it is good for the farmer; it is good for the breeder. We are increasingly seeing that IPRs are becoming a very important tool for market access.”

Information provided by Mr. Philippe Toulemonde, President of Star Fruits (France), highlights the way in which plant breeders’ rights, combined with

trademarks, allows supply of fruit to be aligned with demand and provides traceability from the orchard to the consumer. PVP enables all the actors

(breeders, nurseries, producers, packers, distributors) to participate in the overall project and to benefit from its success (see Box 6).

BOX #06

Mr. Philippe Toulemonde,
President of Star Fruits
(France)



“Breeding improves fruit quality of taste, coloration, storage, etc. It leads to improvement in cultivating practice – less pesticides, for example, for scab-resistant varieties. A virtuous circle – if the grower gets added-value with a [plant breeder’s right] PBR variety, it is a way of investing more, so that we are able to give back to the breeders some financial results and resources so that they can continue their breeding programs. It is a virtuous circle to try and supply the fruit industry with the best products. Moreover, with PBR, we have the capacity to organize the production or the distribution and to put the emphasis on a quality approach at all the different stages of production. The example of the variety club. The goal is not only to give the farmer a good product – at the end of the day it is to inform the consumer of the quality of the product and to have a complete circle of good work practices. We can do that using PBR and the trademark. PBR is the basis of the collective organization.”

Mr. Eduardo Baamonde, Director General, Cooperativas Agroalimentarias (Spain) explains the aims of grower cooperatives in introducing new varieties.

In addition to the agronomic qualities that new varieties bring, such as increased yields, disease resistance and early maturity, the market quality of new varieties and the way in which

PVP has enabled the development of Spanish cooperatives has enabled the Valencian Community and Anecoop to achieve success for their farmer members (see Box 7).

BOX #07

Mr. Eduardo Baamonde,
Director General,
Cooperativas
Agroalimentarias (Spain)



“The development of new varieties stands for dynamism, modernity and permanent innovation. If we wish to remain competitive in a global system, then we must ensure that these features become a permanent part of the European grower sector. According to a European Commission Green Paper of 2007, Spain will be one of the countries most affected by climate change, with agriculture being the worst hit of all sectors. The European Commission warns that, unless steps are taken, by the end of the century we could see a fall in yields of up to 30 per cent, as a result of climate change and other issues such as desertification, erosion, forest fires, increased salinization and the appearance of new pests and diseases. In order to tackle these possible new scenarios, we will require specific research, development and innovation (RDI) strategies focusing on crop selection and the development of varieties that are better adapted to the new conditions. The development of new varieties will doubtless be inhibited if breeders, the group committed to research into new varieties, are not compensated for their efforts. For many years now, cooperatives have been demonstrating the importance of backing, and committing to new plant varieties. Those groups opted to develop varieties for their members and are now world-famous in this field, offering not just new and improved varieties but also a high level of added value to their growers.”



FARMERS AS BREEDERS

There are no restrictions on who can be considered to be a breeder under the UPOV system: individuals, including individual farmers and growers, and agricultural cooperatives, use plant variety protection. UPOV

has developed an internationally harmonized, transparent system that facilitates applications by breeders, whether they are individuals or large organizations (see Box 8).

For a farmer or grower wishing to breed new varieties, one of the most

important features of the UPOV system is the “breeder’s exemption”, which means that farmers and growers can use protected varieties as a starting point for their breeding work (see http://www.upov.int/edocs/expndocs/en/upov_exn_exc_1.pdf).

BOX #08

Mr. Derk Gesink,
farmer and hobby breeder
(Netherlands)



“The UPOV system of PVP is not just a system to favor international companies. You can cross your own old local varieties with the latest varieties developed by international companies to get the best locally adapted varieties.”

In the “The Ashiro Rindo Story” (see http://www.upov.int/about/en/benefits_upov_system.html), Mr. Yoshiteru Kudo (Japan) explains how a group of smallholder farmers developed a project with the Ashiro

town agriculture cooperative to start breeding new varieties of gentian (Rindo) in order to improve the market for their flower production. Using plant breeders’ rights and trademarks, Ashiro Rindo has developed a

multimillion dollar international business that provides a year-round supply of cut flowers to the European Union and the United States of America through licensed production in New Zealand and Chile (see Box 9).

BOX #09

Mr. Yoshiteru Kudo,
(Japan)



“In 1971, 19 young farmers started gentian cultivation. In 1986, a project led by the Flower Production Group of the Ashiro Town Agriculture Cooperative was started to breed new varieties of gentian (Rindo) flowers. New gentian varieties are now jointly bred by the growers and the Hachimantai municipal government. New varieties (protected by PBR) are supplied to the world market and the royalties collected from the sales are used for the further development of new varieties and for training growers to maintain competitiveness.”

More information about UPOV and plant variety protection is available from the UPOV website (<http://www.upov.int/portal/index.html.en>) and copies of the proceedings and all presentations made at the Symposium are available at http://www.upov.int/about/en/benefits_upov_system.html





AGRICOMMERCE

Il sito dell'e-commerce Agroalimentare del Lazio



ITALY'S FIRST E-COMMERCE SHOP. DIRECT SALE JUST A MOUSE CLICK AWAY!

Coldiretti Lazio

Coldiretti Lazio has spearheaded for Coldiretti the trial of Italy's first e-commerce shop, for the direct online sale of farm and food products, and has presented the first results of "pilot project" launched during the 2013 Christmas season. The project relied on the support of about 40 farms from Rome and Lazio,

belonging to the Campagna Amica network and present at the Mercato del Circo Massimo farmer's market at Via San Teodoro 74 in Rome, that provided food products from their own production, and was sponsored by Agriventure and Gruppo Intesa Sanpaolo. "The data we have, presented at a press conference this past 25 January, regarding the first trial phase," said Coldiretti Lazio director Aldo Mattia,

“encourage us to broaden our horizons and use this new system of direct online sale to give an ever broadening public the possibility of purchasing high-quality food products, guaranteed by the Coldiretti name and tested throughout the entire supply chain – the finest expression of Italian-made quality. It is a safe buy, and one I hope will also make the difference on Italy’s Internet market that an ever-increasing number of users in our country is showing it so greatly appreciates for other commodity categories.”

Introduction.

In the 2013 Christmas season, 7 million Italians bought presents online – 1,800,000 more than in 2012. These are people who rely mainly on the Internet for much of their habitual purchasing, from books to electronics, from travel to digital content. With the emergence over this past year of new product categories – cosmetics, special food products, furnishings, and home accessories – 2013 was a year rich in positive surprises for Italy’s e-commerce as well.

Today, more than 30 million Italians own smartphones, and no fewer than 22 million use them to navigate the Internet. According to Coldiretti’s research, more than 10% of purchases are made by smartphone or tablet – a figure that has more than doubled over 2012.

In a period of tight household budgets, the flash sales and couponing sectors have played an extremely positive role, providing the more undecided with quality products and services at very affordable prices.

Food e-commerce in Italy in 2013

Market data show that in Italy, only 9% of users making purchases online buy in the food sector, for a weight of about 1.2% of total e-commerce revenues (the lowest figure in the EU), as against the UK, where the figure is 5.5% (the highest figure in the EU).

Out of total Italian e-commerce revenues equalling about € 11 billion, the food sector’s 1.2% means about € 132 million a year (90% of which obtained by a single department store operator).

Sale directly by the producer, from whom niche products (wines, cheeses, oil) or local produce are purchased, thus contributing as little as possible to the carbon footprint, is the basis for small outfits exploiting the logic of purchasing groups or such advanced marketing techniques as gamification (a garden given in custody, that you build on site, and then you receive fresh produce at home).

In the most interesting situations we find small companies that rely on some partner farms and thousands of members who have overcome the distrust of the consumer that has to buy fresh produce sight unseen, telling the farm where they come from, and using social networks to share the purchasing experience. On these farms’ sites, the service component is also of great importance: I order in a matter of minutes, and I get fresh produce, with the shortest possible supply chain, delivered to my house when I want. The typical consumer is a woman, about 40 years of age, of medium-high income and culture. She cares about the product’s quality and genuineness, and is aware of its seasonality.

In Italy today, aside from these small – at times tiny – outfits, there is no food platform for direct online sale that has an aggregational strength important enough to compete with the giants of large-scale retailers and of industry.

The importance of Coldiretti Lazio’s Christmas package “pilot project”

- 34% of Italians purchase products online; of these, 8% are food products.
- 90% of purchases are made by PC, while smartphones account for 5% of spending, and tablets 5%, with smartphones showing a growth trend.
- Of the 100% of the products sold online, 9% in Italy is of food origin, showing an upward trend; we may thus estimate that 3.78% of Italians make online food purchases, but in 2014 this figure will top 5%.

We are thus entering a growth market, one not ready in the area of portable devices (smartphones and tablets), but already effective for traditional computers.

Why e-commerce of food products?

In France, Germany, England, Holland, and Austria, food e-commerce is highly developed.

Since January 2010, throughout Europe inflating food costs have been a constant trend: Italians are increasingly trusting their purchases to the web, where savings offsets the increased cost of inflation, replicating the behavioural model of citizens elsewhere in the European Union. Often, e-commerce food customers set no limits on their spending, as they are episodic purchasers.

Objectives of the trial phase

- Verifying the response times and productive capacity of the smallest outfits
- Analyzing the “hottest” time slots for purchasing and availability of delivery
- Testing the performance of the logistics and distribution for Rome
- Verifying the consistency of the supposed target for the future of regional e-commerce

The constraints we have set for ourselves

Having chosen the month of December 2013 for the trial phase of the first e-commerce Bottega Italiana di Campagna Amica, thus coinciding with the Christmas season (already highly complex for local traffic), the decision was made to limit the complexity of managing the initiative, in order to be able to achieve the goals and analyze the results more easily.

Some clear constraints have thus been defined:

1. Limited number of producers involved (all small in size)
2. Sale of non-perishable products (NO FRESH PRODUCE)
3. Goods on consignment provided to Agricommerce for online sale
4. No possibility of customizing the shopping cart (possibility of purchasing only pre-assembled Christmas packages)
5. Customers to be residents of Rome, and deliveries limited to national territory.

How have we chosen the products and companies?

Coldiretti Lazio has identified Rome's Mercato di Campagna Amica del Circo Massimo farmer's market as the physical location entrusted with supporting the online trial.

As broad as possible a basket of products was defined (pasta, legumes, oil, wine, cheeses, cold cuts, organic, etc), 16 suppliers were contacted, and the various product aggregations were determined, which in the end created the 16 types of Christmas packages that were aggregated by price categories: up to € 30, between € 30 and € 50, over € 50.

Result: in a three-week trial, more than 170 food packages and about 900 products were sold.

The farm and food market in Italy

Italy's farm and food sector has been suffering, and the latest data published by Coldiretti clearly show a downward trend:

- Christmas: food spending declined 8%.

This is Coldiretti's estimate, which confirms that Italians are not abandoning the year's most traditional appointment – for which, however, much less was spent than last year.

- Trade: According to Coldiretti, department store sales are down; only discounters saw an increase (+1.5%).

Istat's data on the October retail trade show sales declining in all distribution types for food, from -2.8% for small shops to -1.2% for supermarkets, but even -0.3% for hypermarkets. Only sales of low-cost food at food discounters grew, showing increases of 2.4% in October and 1.5% in the first nine months of 2013.

The "Made in Italy" farm and food market in the world

According to what emerges from Coldiretti's analysis based on Istat data for foreign trade, 2013 set a historic record for the value of exports of Italian farm and food products, which reached an all-time high of € 33 billion. Most exports are to countries in the European Union, for an estimated value of € 22.5 billion (+5%), but Italian quality is also on the rise in the United States at € 2.9 billion (+6%), on Asian markets (+8%, € 2.8 billion), and on African markets, which have seen a 12% increase, topping € 1.1 billion. But the best result comes from Oceania, which showed a +13% increase.

Among the leading sectors for Italian quality, the most-exported product is wine, for € 5.1 billion (+8%), ahead of fresh produce (€ 4.5 billion), which saw 6% growth, while oil grew by +10%, bringing the total value to € 1.3 billion. Also on the rise is pasta, always an important representative of Italian quality on tables overseas, reaching € 2.2 billion (+4%).



FIGHTING FOOD WASTE THROUGH INNOVATION: THE CASE OF THE DRIED MANGOS IN ZAMBIA

Elina Eriksson,
Chankwakwa, Kabwe, Zambia

Dorothy Eriksson and her husband Rolf established Chankwakwa farm in Kabwe, Zambia, in 1973. Rolf is originally from Sweden and

Dorothy from the Mwembeshi village, Zambia. The mixture of Swedish and Zambian culture might at first appear as an odd couple.

However, it quickly becomes evident that this is not the case. In reality, the Erikssons are a fantastic example of the cultural diversity that exists in Zambia. Over the years, they have met many milestones, but one memory stands out in Dorothy's mind: the day their natural food-processing business received its Hazard Analysis Critical Control Point (HACCP) certification, reaching an international standard for food safety.

"When my husband and I started Chankwakwa in 1973, I never realized the impact the business would have on the local community. Most of Chankwakwa's 50 factory workers are women. The jobs we created [for these women] give them pride because they are able to pay for their kids to go to school and to buy uniforms. The women have a sense of worthiness because they earn a salary. I remember

that scream from the girls when I told them, 'We've passed!' We went totally wild because we knew that a door had been opened," Dorothy Eriksson says.

The HACCP certification opened the way for Chankwakwa to take its first tentative steps towards expanding overseas. The company began shipping sun-dried mangoes to Hansen's Ice Cream in Denmark in the spring of 2011, and now exports about 300 kilograms of mangoes to Hansen's each year. Chankwakwa is well established locally, with products such as jams, sun-dried fruits and tomato sauces sold in three major supermarket chains: Pick n Pay, SPAR and Shoprite Group.

According to Eriksson, Chankwakwa is fast becoming a household name in Zambia. Since its transition in 2000 from a farm-only business to a food-processing company, revenue has grown about 200%. But getting to this point was not easy.

GETTING CERTIFIED

Business was 'very stagnant' during the first seven years, says Eriksson. As commercial farmers, the Erikssons at first did not have the technical knowledge to apply for certifications or to run a processing plant.

'In Zambia, we take it for granted that we are organic, and that's maybe because mangoes grow without any help at all,' says Eriksson. 'We came to realize that to be organic, you've got to have the certification. You've got to have the traceability.'

The Erikssons learned about organic certification through training and support from several organizations, including the International Trade Centre (ITC). In addition to the HACCP certification, Chankwakwa now has certifications from the Fairtrade Foundation, which ensures farmers are paid at least market price for their products, and Ecocert, an international standard for organic goods. The Erikssons had a reason for establishing their food-processing business in this way. 'It was right from the beginning that my husband and I realized we had to do something for the community,' says Eriksson.



FROM FIELDS TO FACTORIES

Giving back to the community meant providing local farmers with sustainable jobs. Chankwakwa organized farming families into cooperatives and trained them to grow and harvest mangoes, guavas, bananas and tomatoes.



By doing so, Chankwakwa tapped into what Eriksson describes as a new market in the country.

‘Mango has always been a tree that you planted to sit and entertain your guests under. It’s never been looked at as a fruit to make money with,’ says Eriksson. ‘It’s amazing, we’ve got our farmers so excited now and beginning to get their seeds back and make more seedlings.’

People who would throw away fresh fruit because they were unable to sell it now had the opportunity to sell them at a fair price. Today Chankwakwa employs 232 farmers to harvest fruits and vegetables, with one group working near the processing plant in Kabwe and another in the Luapula Province, about 700 kilometres away. Eriksson says ITC-assisted farmers in Luapula receive organic certification and training on the management of mango trees, which has resulted in higher quantities of the fruit and an expanded mango-processing season.

In line with its purpose of functioning as a sustainable and environmentally

friendly business, Chankwakwa uses six solar-powered dryers and a large hydropowered electric dryer to process the fruits and vegetables. Once they are processed, they are used in jams or sauces, or packaged as dried fruit to be sold in markets around the country.

CHALLENGES OF TAPPING INTO GLOBAL MARKETS

Even as the local market for its products continues to grow and farmers find more work opportunities, Chankwakwa lacks buyers in the global market. Hansen’s Ice Cream in Denmark remains Chankwakwa’s only out-of-country buyer.

Finding new export partners overseas would create significant growth in business because products would be shipped in units of hundreds of kilograms, rather than 10 or 20 kilograms at a time, as they are for shipments to local supermarkets.

The major challenge is not only finding more buyers, but the high cost of shipping the products. Eriksson says it costs about US\$ 5 a kilogram to ship dried mangoes to Denmark.

‘Zambia is landlocked and to get products freighted into Europe, freight charges are so high that our mangoes are not as competitive in price,’ says Eriksson. Despite the ‘fantastic’ feedback on the taste and quality

of the mangoes, in the end, it comes down to price. To make its products attractive to global buyers, Eriksson says Chankwakwa will need to ship larger volumes to more customers at a time.

‘BIG HOPES’ FOR THE FUTURE

The founders of Chankwakwa run their business with four goals in mind: produce high-quality products, empower people in rural areas, become the biggest producer of sun-dried fruit in the country, and export to the region and to overseas markets.

Dorothy Eriksson says she has ‘very big hopes’ in terms of achieving the fourth goal. In the next two years, the company is aiming to increase the number of farmers it employs from about 200 to 500 to meet rising demand. Chankwakwa is in talks with four new clients interested in mango shipments, which could boost exports to three or four tonnes of mangoes every year, versus the current 300 or 400 kilograms.

Expansion of the business could also involve working with farmers in the Western Province of Zambia, as ‘there aren’t enough mangoes’ in the Central Province, according to Dorothy Eriksson. Although the focus is currently on mangoes, as the business continues to grow, attention will shift to other fruits and vegetables as well.



Chankwakwa has come a long way since it started in 1973, when the Erikssons set out on a mission to give back to their neighbours.

It was not that we looked at it as a business, we didn't realize it would even be exportable,' she says. 'We identified the community first.'

The story of Chankwakwa is an impressive success. The strong will and innovative ideas of a strong woman in Zambia, contributed to the development of the local economy but also to the global market. The desire of Chankwakwa and all the cooperatives connected to it is to expand overseas and in Europe, keeping in mind its origins and values. Once again, farmers through innovation made a real difference in their community and on a global scale.



TOWARDS BETTER WOMEN'S LEADERSHIP IN NEPALESE AGRICULTURE.

Madhu Sudhan Ghimire,
Social Media Intern and Local Representative in Nepal, at YPARD

I continue to find it fascinating but not surprising how much of a country's overall socioeconomic development is revealed by the status of its women. The high correlation between gender equality and human development suggests that more socially inclusive societies are generally more stable and prosperous. It's no coincidence that Nepal ranks 157th of 187 countries in the 2011 UNDP Human Development Index and 113th of 146 in the Gender Inequality Index (GII) within the bottom quartile for each index.

One trend that is having a dramatic effect both positive and negative for Nepali women is the increase in out-migration of working-age Nepali men in search of employment. The 2011 census found that approximately one in ten Nepali men is employed abroad. This demographic shift has created new opportunities and challenges for the women left behind. As in many countries, Nepali women have always played an important and often unrecognized role in the agriculture that sustains nearly 80 percent of the population. With so many men abroad, however, women have stepped into more aggressive leadership roles than they have traditionally had.

There is consistent and compelling evidence that when the status of women is improved, agricultural productivity increases, poverty is reduced, and nutrition improves. Women farmers often do not have the same access to land, water, seeds, training, and credit that men do. It is estimated that if women did have the same access to these resources,

they could increase farm yields by 20-30 percent. This increase in agricultural output could reduce the number of hungry people in the world by up to 150 million people.

Investing in women and empowering them with new techniques yields better incomes and improved quality of life for their families. In Nepal, the out-migration of males from villages across the country in recent years has fueled a "feminization of agriculture." Considering the significant role of agriculture in Nepal's economy, addressing this phenomenon will be key to sustaining and growing the sector.

Due to built-in inequities of the existing economic system the micro impact of macro policies have hardly helped the poor women. Lack of access to resources is the fundamental factor for women's greater deprivation. Absence of property rights has adversely affected poor women from creating self-employment, generating independent income and their belongingness to the land. Much more work is needed to be done to bolster women's roles in agriculture from the farm where food is cultivated to the homes and plants where it is packaged and processed.

Theoretically in the agricultural value chain which includes farmers, processors, suppliers and retailers contribute profits at every step on this journey from the farm to the dinner table. But for small-scale farmers, many of whom are women, the value chain isn't producing profit. For example, a woman who labors on a farm may not be the same person who transports the crop to the market and gets paid. Those earnings don't automatically trickle down to

the woman, meaning she often has little say in how the earnings are spent and may have little interest in continuing to work. This can affect the success of agriculture programs, which often depend on women's labor without considering how they are compensated for it within the household. We need to better understand the varied relationships within farming families as well as the gender dynamics involved. More research can provide such insight. What's needed specifically is research that analyzes the unique experiences of men and women farmers at each point of a commodity's journey from "farm to fork." This type of contextual evidence should drive how we design programs that aim to boost agricultural efficiency and productivity as well as help farmers – men, women and entire households – profit from their contributions.

Researches don't underpin programmatic activities because practitioners tend to develop programs with a particular crop in mind, instead of the people affected by the success or failure of that product in the marketplace. Meanwhile, practitioners and researchers traditionally work separately from one another. By not sharing valuable information, neither group has recognized the potential benefit of collaboration to reach the same end goal.

We need to build on this progress so that both researchers and practitioners better understand how gender matters in agriculture. Then, we can all start integrating these considerations in programs so everyone working along the value chain benefits.

WHEN FARMING GOES VERTICAL!

Codrin Paveliuc Olariu,
YPARD Steering Committee Chair
and postdoctoral researcher on global
food security policies at the University
of Liege, Belgium

Last year, I had the great honor to be a mentor in the 2013 Thought for Food Challenge for Agrilution, a Netherlands based team from HAS University of Applied Sciences in Den Bosch.

Max Loessl, the founder of Agrilution, is a very energetic young man with a passion for agriculture and innovation. Agrilution's idea to ending world hunger took into consideration a few things that we currently take for granted, but that in the future will be very valuable. They looked at scarcity, scarcity of food, land, water, energy, nutrition. As it is expected that the world population living in urban areas will reach by 2050 70%, it is also expected that a big decrease in the available arable land would happen. Today, 70% of all fresh water consumed in the world is used for agriculture, but, with an increase in population of 2 billion by 2050 and also an increase in living standards for current population, a decrease in the available fresh water is expected.

How does Agrilution hope to solve world hunger? Through agricultural innovation. For some time now, the concept of vertical farming has slowly began to be developed by researchers and enthusiasts that want to offer the world an alternative to current practices and make use of all available resources at a maximum potential.

Agrilution's idea is simple: if we don't have sufficient arable land for 1 hectare of lettuce, for example, why don't we create this by stacking the crop on several layers. Thus, Agrilution is set to develop a module that allows people to grow almost any plant without needing too much land. With their first test module, the team has proven that the concept is a viable one, producing several crops at a much faster pace than usual.

The other factors that Agrilution took into account were water and energy

consumption, and the nutritional value of plants grown in a vertical farm module.

By creating an environment in which water is distributed to plants in the form of vapors and having a water recirculation system, Agrilution has managed to decrease its module's water consumption by over 50% compared to current farming practices. No drop of water is wasted.

In terms of energy consumption, Agrilution is set to have a low energy intake by using special LEDs that, when replacing the solar rays required by plants, have a low voltage and do not consume as much as regular lights. The added advantage of using LEDs to help plants grow is that, while plants receive the same wavelengths as in normal conditions, these are concentrated and "fed" to plants 24 hours/day, allowing a faster growth.

While many people might consider this as a health threat due to the artificial lighting used, the plants are grown in nutrient cubes that give them the exact amount of nutrients that they require.

Plants grown in these kind of support are more nutritious and tastier, because they contain all necessary chemical elements that a plant needs to grow, while, in field

practice, some (micro)elements might be missing, leaving the crops with a lower nutritional value. While Agrilution's idea caught the spotlight after their participation in the 2013 Thought for Food Challenge and being invited to several conferences to present it, such as the Global Forum for Innovations in Agriculture held in February in Abu Dhabi, they are not the only young professionals taking the agricultural sector by surprise. From innovations in agricultural technology such as the one presented by Agrilution to the introduction of new technologies (such as social media) into fields where no use would have been seen for them and to exceptional new practices in agricultural economics and policies, young professionals are now, slowly, conquering the world of agricultural research.

Why the word innovation was not necessarily linked in the past with youth, but to senior professionals, today, when someone speaks about innovation in agriculture, they look at examples set by young professionals.

From vertical farming to improved distribution systems of food and better usage of food waste, young people are ready to societal challenges.



A VIEW FROM AFRICA ON BUILDING HUMAN CAPACITY - ON YOUTH AND AGRICULTURAL INNOVATION

Raymond Erick Zvavanyange,
*Science Practitioner and Critic, Young Professionals
for Agricultural Development, Zimbabwe Representative*

A country's ability to run a successful agriculture and food security program is determined by the human capacity it has built up through adequate training and/or education of the people involved in food production, food processing, food storage and distribution, income generation, and technology development and maintenance. The same argument for human capacity is embedded in the timely book on agricultural innovation by Harvard Professor, Calestous Juma titled "The New Harvest: Agricultural Innovation in Africa". The human capacity will ensure that Africa remains at the forefront in use of modern methods and technologies to advance agriculture with complementary spin-offs in the entire agricultural value chain.

The Limits of an Agricultural Innovation System

Agricultural innovation is a spark to rapid human progress when supported at all levels by decision-makers and implementing organizations. Real-time change now more than ever is in the hands of proactive human capital within the African continent, and this includes the youth. To focus on youth is no more than preference but out of necessity. In fact, in the next years Africa will dominate as one of the most youthful regions of the world, with at least over half of its

population as part of the "youth bulge". In most of Sub-Saharan Africa, though considerable momentum is gathered agricultural innovation, there is an urgent need for ingenious solutions, knowledge, and institutional arrangements to foster dialogue and action at both the individual and organizational level. Unfortunately, innovation means different things to different people – especially when considering women and the youth, academia and practitioners in research, education, and extension. Learning and experiential models are fast changing. As such, young people should adapt quickly if they are to make a meaningful contribution in the new contexts.

An innovation system is the group of organizations and individuals involved in the generation, diffusion, adoption and use of new knowledge and the context that governs the way these interactions and processes take place. According to the Forum for Agricultural Research in Africa's Integrated Agricultural Research for Development Concept Paper, agricultural innovation is an emergent property of the broader 'innovation system'. The agricultural innovation system framework makes use of individual and collective capabilities to translate information and knowledge into a useful social and economic activity in agriculture.

Future Directions on Youth and Agricultural Innovation

Even though it is predicted that there

will be more service industries and less of production functions in Sub-Saharan Africa, the recently concluded Zimbabwe Youth Agripreneurship Summit hosted by the Zimbabwe Farmers Union, held at Harare Institute of Technology from December 10th-12th, 2013, gives hope that there is human capacity still motivated to engage in farming as a business enterprise. This passion and commitment testifies that emergent youth, not only in Zimbabwe, but across the African continent, when given opportunities within the agriculture domain can achieve just about anything, including growth of their businesses.

However, youth and agricultural innovation is not without its fair share of challenges.

To innovate simply is to change the odds of any situation – to alter the relationship between opposing sides: a problem and a solution. There remains a huge demand for a critical mass of young people especially in production functions. In order to drive agricultural innovation, Africa needs to capitalise on existing frameworks, best case studies, and tap into its political leadership. Youths in Africa now live in a climate of opportunities which demands at the very least confidence and ability to build trust, cooperation and strategic partnerships in the innovation system.

This is a feat yet achievable and Africa needs not waste time.



ROBOT FARMERS ARE THE FUTURE OF AGRICULTURE

They are called Farmbots and for some people they represent the future of agriculture. A new vision of robots patrolling the vineyards and cornfields of the UK may seem dark and satanic to some, but according to farmers and the UK government it is the future. The introduction of robot in agriculture represents an opportunity for farmers and it will bring an end to some of the most back-breaking jobs around the farm. An increasing number of Farmbots are being developed that are capable of complex tasks that have not been possible with the large-scale agricultural machinery of the past.

<http://www.theguardian.com/environment/2014/jan/09/robots-farm-future>

////////////////////////////////////
AGRINATURA SCIENCE DAYS

The Agrinatura Science Days will be held from 5 to 7 May, 2014 at the University of Natural Resources and Life Sciences, Vienna, taking place from 5 to 7 May 2014.

The Agrinatura Science Days bring together researchers and practitioners concerned with family farming, food security and transformative change in one single forum.

They offer a unique opportunity for discussing, learning, networking and exploring new research.

<http://www.agrinatura.eu/Activities-Projects/AGRINATURA-SCIENCE-DAYS/>

////////////////////////////////////
SHEIKH ZAYED AWARD FOR PIONEERING INNOVATIONS IN AGRICULTURE

On the occasion of the Global Forum for Innovations in Agriculture (GFIA) that was held from 3 to 5 February 2014 at the Abu Dhabi National Exhibitions Centre, the UAE Minister of Environment and Water, Rashid Ahmed bin Fahad, announced the institution of the Sheikh Zayed Award for Pioneering Innovations in Agriculture. The prize will be awarded next year, during the Global Forum for Innovations in Agriculture (GFIA). The modalities of the award are being finalized and the details will be announced in due course.

<http://gulfnews.com/news/gulf/uae/environment/uae-announces-zayed-prize-for-agriculture-innovation-1.1285841>

////////////////////////////////////
“SILL TO SILL PROJECT”

The “Sill to Sill” project is the winner of a contest called by Hackney City Farm, in London.

The project aims at introducing window sill square footage as a means for growing produce in containers right there in the city. It was found in their research that Great Britain alone has 600 acres of total potential sill growing space.

A mock up wall is cheery and inspiring with unique windows and deep, colorful sills. While most hold plants, some are close to the ground to double as a bench seat for those stopping by.

<http://sill-to-sill.tumblr.com/>

////////////////////////////////////
INTERNATIONAL ENCOUNTERS - “FAMILY FARMING AND RESEARCH”

A two-day Conference where researchers, trainers, decision makers, representatives of family farmers and of civil society organizations will brainstorm

and discuss on research needs and priorities and modalities for higher efficiency. The Conference will be held from 1 to 3 June 2014 in Montpellier, France. It will include thematic workshops and plenary sessions involving high level speakers from major institutions,

renowned scientists and acknowledged leaders of farmers’ organizations.

<http://www.agropolis.org/news/2014-international-encounters-family-farming-research.php>

