News Release

Italian scientist brings 'pasta power' climate adaptation solution to West Africa

- 'Heat tolerant' durum wheat discovery can help eradicate poverty
- Research wins international Food Security prize

London, November 16, 2017 - A 'crazy idea' has resulted in the ability to grow durum wheat in the extreme heat of famine-affected Senegal, Mauritania and Mali[1], potentially boosting the income for 1 million farming families, and therefore winning the 2017 Olam Prize for Innovation in Food Security.

The genome fingerprinting research project[2] led by Dr Filippo Bassi of ICARDA[3] and Professor Rodomiro Ortiz (SLU, Alnarp), and funded by the Swedish Research Council, used non-GM molecular breeding techniques to develop a set of durum wheat varieties that can withstand constant 35-40 degree heat along the savannah of the Senegal River basin.

In this region, farmers grow rice for 8 months of the year[4] but the land remains unproductive for the other 4 months. The new durum varieties have therefore been developed to grow super-fast[5] so that farmers can grow the wheat between rice seasons, which could produce 600,000 tonnes of new food, equivalent to 175 servings of pasta per person per year in the region, and could generate USD$210 million in additional income for the farmers[6]. As the wheat has 5 times more protein than rice, as well as vitamins and minerals, it will also help to improve diets.

Through ICARDA's policy of sharing all germplasm and IP (identity preservation) freely with developing countries, the discovery also has wide adaptation potential for other areas hit by increasing temperatures. This ground breaking research was therefore voted by a panel of expert judges as the winner of the Olam Prize for Innovation in Food Security – an international prize launched by the global agri-business in partnership with the *Agropolis Fondation*[7].

Dr Bassi commented, "When we had the idea 5 years ago, people thought we were a bit crazy so we are thrilled to see our vision of introducing durum wheat into this region recognised by the Olam prize. I would like to give special thanks to our supporting partners U-Forsk2013, CNARAD, ISRA, Université Mohammed V, and SLU Sweden. By working closely with the farmers, we have gained their trust as they can see the benefit of planting this crop which can be easily cultivated with minimum investment. Now we need to help create a route to market so we will be using the prize fund to foster the establishment of a commercial partnership with the North African pasta and couscous industry."

[1] Ranking 67th, 83rd and 94th respectively in the Global Hunger Index, 2017
[2] Discovery of the genomic regions – a piece of DNA that contains the sequence of one or more genes of importance
[3] ICARDA's (the International Centre for Research in the Dry Areas) mission is to improve the livelihoods of the resource-poor in the dry areas through research and partnerships dedicated to achieving sustainable increases in agricultural productivity and incomes
[4] Rice cannot grow well during the winter months when daytime reaches 35-40 degrees Celsius, but night time reaches only 16 degrees Celsius
[5] With the potential to yield over three tonnes per hectare in just 90 days
[6] The average farm household in Senegal generated 646,500 CFA francs from farming in 2011 – as of 15/11/17 this equates to US$1,167.12 (Source: International Food Policy Research Institute)
[7] The prize value is US$50,000

Sunny Verghese, Co-founder and Group CEO said: “Global Agriculture is facing significant problems with many millions of people going hungry and the world struggling to meet demand for growth in calories within the planetary boundaries. This research from Dr Bassi and his team goes to show how we can Re-imagine Agriculture through an inspired idea and the dedication of a team of people with a common goal. This breakthrough not only creates a viable and scalable solution which will potentially improve the lives of so many in the Senegal Basin, it could also be of great benefit to other regions affected by rising temperatures in the face of climate change.”

Dr. Pascal Kosuth, Director of Agropolis Fondation said: "The African region has, on average, the lowest agricultural productivity in the world; and many countries from the continent have met increased demand for food through overseas food imports. Developing sustainable agricultural production under severe climatic conditions and family farming systems requires an integrated effort – from plant breeding and seed systems to production systems, to product value chain as well as extension and training of farmers. This is why the panel of independent international experts convened by the *Agropolis Fondation*, unanimously selected the ICARDA project as this year’s winner of the Olam Prize for Innovation in Food Security.”

To find out more:

- Watch an **animation** about this game-changing research
- Learn more about our winning genetic scientist by reading his **Q&A**
- View **images** of the durum wheat fields in the Senegal Basin

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For further information, please contact:

Olam Corporate Communications

Nikki Barber, Group PR Manager, Nikki.barber@olamnet.com

Emma Blinkhorn, PR Manager, emma.blinkhorn@olamnet.com

Notes to Editors

Conventional Molecular Breeding Vs GM Breeding

The goal of both GM and conventional plant breeding is to produce crops with improved characteristics by changing their genetic makeup. GM achieves this by adding a new gene or genes to the genome of a crop plant. Conventional breeding achieves it by cross-pollinating together plants with relevant characteristics, and selecting the offspring with the desired combination of characteristics, as a result of particular combinations of genes inherited from the two parents. (Source: Royal Society)

About the Olam Prize for Innovation in Food Security

The Olam Prize for Innovation in Food Security was launched in 2014 in partnership with Agropolis Fondation to recognise agricultural innovation and help advance agricultural sciences and sustainable development through research for food security.

Open to both research teams and individuals globally, the Prize rewards innovative research which carries a significant potential impact on the four As of food security: availability (is there enough), accessibility (in the right place), affordability (for the whole population) and adequacy (for a nutritious, balanced diet). The Olam Prize winner receives an unrestricted US$50,000 grant for the scaling up of research.

In 2015, the inaugural prize was awarded to the SRI International Network and Resources Center (SRI-Rice) for their work on the System of Rice Intensification (SRI), a game-changing innovation that enhances productivity of rice paddy, water conservation, livelihoods, biodiversity, environmental quality and crop resilience to climate stress.

About Olam International Limited

Olam International is a leading agri-business operating across the value chain in 70 countries, supplying various products across 18 platforms to 23,000 customers worldwide. From a direct sourcing and processing presence in most major producing countries, Olam has built a global leadership position in many of its businesses. Headquartered in Singapore and listed on the SGX-ST on February 11, 2005, Olam currently ranks among the top 30 largest primary listed companies in Singapore in terms of market capitalisation. In 2016, Fortune magazine recognised Olam at #23 in its 'Change the World' list. More information on Olam can be found at www.olamgroup.com.

Olam is located at 7 Straits View, Marina One East Tower #20-01, Singapore 018936 Telephone: +65 63394100, Facsimile: +65 63399755.

About Agropolis Fondation

Agropolis Fondation is a French scientific foundation established in 2007 to promote and support high-level research and higher education as well as to broaden international research partnerships in agricultural sciences and sustainable development research.

It supports a research network with scientists working on all aspects of the plant and addressing issues concerning cultivated plants of tomorrow to face increasing demand for plants and plant by-products for food and non-food uses; agro-ecological transition through the development of related knowledge, methods and tools; integrated approaches of the quality of agricultural and food products; sustainability of agricultural and food systems; and interaction between climate change and crops.

Agropolis Fondation is located at 1000, avenue Agropolis 34394 Montpellier Cedex 5 – France

Telephone: +33 4 67047574, Facsimile: + 33 4 67047543
www.agropolis-fondation.fr

About ICARDA

Established in 1977, ICARDA is one of the 15 centres supported by the CGIAR. ICARDA's mission is to improve the livelihoods of the resource-poor in dry areas through research and partnerships dedicated to achieving sustainable increases in agricultural productivity and income, while ensuring efficient and more equitable use and conservation of natural resources. www.icarda.org