



Nius

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27 YEARS
of Dedicated
**Agricultural Research for
Sustainable Development**

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Welcome to the 3rd edition of NARI Nius for 2024. If you have any comments or contributions please drop us a line at: naripng@nari.gov.pg for an e-copy

Information and data can drive agriculture forward

Information and data can create opportunities to develop and drive the agriculture sector forward.

Director General Dr Nelson Simbiken expressed this during the first of the Agriculture Minister's Seminar Series to welcome participating stakeholders from the private and public sector on May 10.

The seminar is the start of realising the much discussed aspirations and plans by creating dialogue, having relevant information and data to guide sector agencies that can contribute meaningfully to the country's economic development.

He expressed that commercial farming requires working closely with people who are connected to their indigenous crops and that is a starting point to ensure they take ownership in agricultural commercialisation.

NARI believes that indigenous food crops can find their place in the commercial agriculture space and closely align such initiatives to the national government's development aspiration.

"We should start thinking critically to lead our people into a system that they are part of our nationhood so that our true Papua New Guinean goals of being a, Smart, Wise and Healthy nation can be achieved by 2050," expressed Dr Simbiken.

Meantime the annual Agricultural Innovation Show 2024, went ahead as planned despite continued rain, which did not dampen the spirit of NARI staff who prepared tirelessly to ensure the two-days including the Agriculture Minister's Seminar series progressed as planned.

This year's theme is "Commercialising the PNG Agri-food System" and was made possible through the sponsorship of Zenag, Trukai, Farmset Limited and the International Cooperation for Development Fund for their generous support in making the this year's event a success.



Council Chairman Nimo Kama



Dr. Nelson Simbiken.



Some of the stakeholder participants.

Human Resource team carry out awareness on restructure



Human Resource team led by HR Manager Jackson Pepeto with his team.

The Human Resource team led by Human Resource Manager Jackson Pepeto carried out an awareness program for the staff at the regional centres starting with Momase Regional Centre (MRC) about NARI's restructure program.

This awareness started at the MRC on June 6 and continued with other regional centres in Aiyura, Eastern Highlands, Tambul in Western Highlands, Laloki in Central and Kerevat in East New Britain.

The objective of rolling out this awareness is to capture the changes in roles, responsibilities and benefits mainly ancillary staff who will be included in the new structure.

The ancillary staff at MRC Bubia and the NARI Head Office raised concerns and questions to the team and were pleased and expressed gratitude to the HR team in conducting the awareness. They collectively expressed that the awareness cleared some doubts and will continue to offer their services to the institute.

In response to concerns that were raised, Mr Pepeto expressed that



MRC and Head Office ancillary staff listening attentively during the awareness at Allan Quartermain Hall, Lae.



MRC and Head Office ancillary staff listening attentively during the awareness at Allan Quartermain Hall, Lae.

responses will not immediately take place but will require time and patience to roll out the restructure program as the institute progresses into the future.

He thanked staff for making their time to attend and contribute towards meaningful discussions.

Dialogue needed in the agriculture sector

The agriculture sector has been stagnant for many years due to lack of proper dialogue and networking within the industry. Director General Dr. Nelson Simbiken made this remark at the Inaugural Agriculture Minister's Seminar Series on the second day of the NARI 13th Agricultural Innovation Show at Bubia, 10 Mile outside Lae, Morobe Province.

Dr Simbiken called for greater dialogue and networking within the industry so that the agriculture sector can grow and contribute meaningfully to the economy of the country. He emphasised the need for all major players in the industry to joined forces and make it happen.

He said, "We have lost those opportunities of sitting and talking together, being up-front, identifying issues and trying to resolve issues together. We can't work in silos".

Dr Simbiken told representatives from the public and private sector that a collaboration of efforts from the Department of Agriculture, Kokonas Industry, Cocoa Industry, Coffee Industry, Oil Palm and the Livestock industries is needed to take agriculture to the next level. He added that they all should work together to contribute to the Government's vision of reaching K200 billion by 2030 as stipulated in the Medium Term Development Plan IV launched in July last year.

He told esteemed guests that NARI initiated the series of the Agriculture Minister's Seminar as an avenue to get the agriculture sector together to highlight challenges faced and find a way forward to meet the MTDP IV(4) requirement. He re-emphasised the Theme of the Agriculture Innovation Show, 'Commercialising the PNG Agri-food System' saying, it was a big topic that needs to be tailored properly and fully understood.

He further stated that this seminar is a stepping stone to having more and better dialogue with the different industries involved in agriculture.

Dr. Simbiken put forth a few challenges for the agriculture sector to transit from subsistence farming to downstream processing



Stakeholders including Agriculture Minister John Boito (standing) Wtag.



DAL Secretary Dr Sergie Bang.

and commercialisation. He made particular reference to the tree crop industry like cocoa who have been exporting raw beans for many years.

He said, if they had gone into downstream processing at that time, the PNG economy would have been boosted.

Director General Dr Simbiken also stressed the importance of information and data in the agriculture sector.

The lack of information, has resulted in the industry being stagnant. He pointed out that the Oil Palm Industry is the only sector that has proper data to work with. He urged other sectors to develop their data and information systems.

"There are a couple of indigenous crops the local people are connected with. The sector must engage local farmers and build their capacity to fully grasp the commercialisation concept," said Dr. Simbiken.

He ended his statement with these words of wisdom, "There is a profound Scripture that said, you and I currently are sitting under the shade of somebody else's trees. Are you planting your tree so that our generation can sit under? The trees that you and I are sitting under was not planted by you and me. It was planted by people who do not have intellectual knowledge like you and me today. We have to start planting our own trees".

Buimo inmates make value-added coconut products

Value added products ranging from virgin coconut oil, and soap developed by the inmates of Buimo Correctional Services were displayed during the NARI Agricultural Innovation Show, 2024, at the Kokonas Industri Koporesen (KIK) stall.

This is part of a rehabilitation program aimed at instilling life skills after they have served their term.

The Buimo rehabilitation program was initiated four months ago to enable inmates to gain life skills to make coconut products to earn extra income and health benefits.

Officers of the Buimo CIS are purchasing the coconut oil products and found it very beneficial for their health and other use. Visitors to the Buimo CSI facility are encouraged to purchase coconut products by the inmates. KIK Provincial Coconut Development Officer Kuna Honeaki expressed that by displaying value-added products will encourage farmers to plant more coconuts which has an existing market at the end of the value chain for coconut.

KIK is working through its research and development service division to improve quality and market for coconut mainly for the white-copra product that must have a 5 to 6 percent moisture level content.

The partnership between KIK and Buimo CSI rehabilitation program is helping inmates with life skills by developing value-added products along the coconut value chain

There are plans by KIK to venture into producing virgin coconut oil, focusing mainly on improving the quality of



Inmate representatives of Buimo CSI and KIK Provincial Development Officer Kuna Honeaki.



KIK Provincial Development Officer Kuna Honeaki and coconut products on display.

white copra, through its research development division. KIK is encouraging the use of coconut shell charcoal instead of cutting down of trees for firewood, which helps to mitigate the negative effects of green house gases in the atmosphere.

The partnership between KIK and Buimo CSI rehabilitation program is helping inmates with life skills by developing value-added products along the coconut value chain and sustaining the coconut industry in the country.

Wenge calls for more research into indigenous plants

Morobe Governor Luther Wenge challenged researchers to venture into studying indigenous plants that are edible and committed K1million when officiating at the 13th annual Agricultural Innovation Show from May 9 to 10, saying there is room for research into indigenous plants and other crops that can be a food source apart from domestic staples.

He says so much research has been focused on staples such as sweetpotato, banana, yam and cassava and such work should extend into the use of indigenous plants.

Governor Wenge urged researchers at NARI to venture into such study as the negative effect of climate change was also affecting food supply.

Papua New Guinea is known for its rich flora and fauna where some of its pristine rainforests are left untouched and create opportunities to explore and discover some indigenous plants that may be of nutritional and export



Morobe Governor Luther Wenge

value.

There are extensive studies done in parts of East Asia, Africa and Middle East where indigenous plants are part of their daily diet.

From coconut collection to entrepreneurship

Karo Ako from the Eastern Highlands Province has been collecting and growing coconut trees for the last 14 years in the Morobe Province. He has a mini farm at Markham Bridge, where he grows coconuts, other crops and looks after livestock as well.

He collects different types of coconut seeds, plant them and watch them grow. So far he has 10 different species of coconuts.

The outstanding one being the Dwarf Coconut which takes only 2 years to grow and bear fruits.

Farmer Ako says, his focus is on dwarf coconuts because they grow faster and he is able to sell the products whether it is fresh, dry or in the form of seed to another farmer or the general public.

He said, he wants to concentrate on coconut farming and venture into producing coconut by products such as coconut oil, soap, powder and more.

He is looking at buying a bigger land to grow more coconuts and venture into downstream processing.

Currently, Farmer Ako sells his coconuts at the Main market in Lae and other openings such as the NARI and the Morobe Show.

He said, the revenue earned from selling is enough to take care of his family, pay for school fees and cater for customary obligations.



Karo Ako

Farewell PNG Pioneer Taro Exporter

The Agriculture sector has lost a valuable partner in the taro supply-value chain, a champion in the fledgling taro industry.

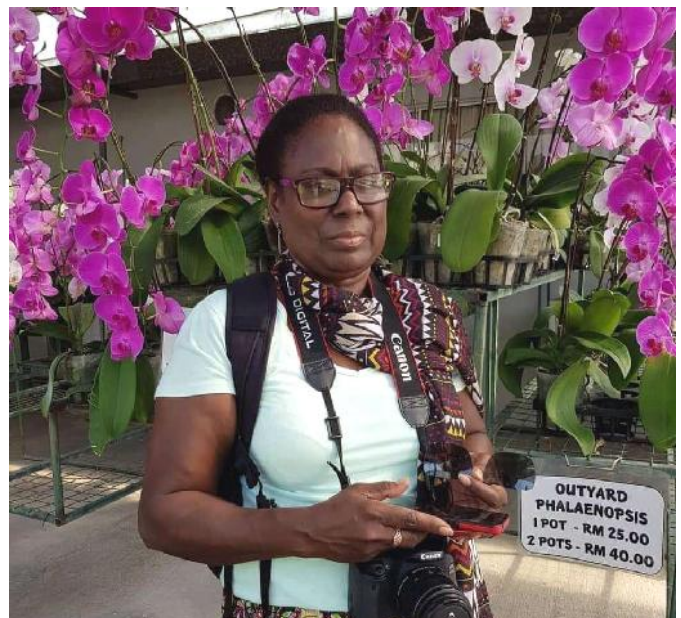
Mrs. Anna Wissink, has walked the talk in downstream processing and commercialisation of one of PNG's indigenous food crops, taro.

A pioneer exporter, breaking all barriers, with the first shipment of PNG's frozen taro to the US market. Director General Dr. Nelson Simbiken described the late Mrs. Wissink as a champion with a vision to fulfil the government's vision of accessing and exporting our local food crop to overseas markets.

Mrs. Wissink also created jobs and assisted farmers with the sale of their taro.

Dr. Simbiken and his staff and management paid tribute to her and shared grievances with the immediate family, her husband David, children and grandchildren on the passing of Anna on May 13th 2024 in Suva, Fiji.

The casket of the Late Mrs Anna Wissink was



Late Anna Wissink

repatriated back to Papua New Guinea on May 24th and laid to rest at the family's plot in Barakau

Sweetpotato farmer calls for more support

A sweetpotato farmer from Asaro Valley in Eastern Highlands is calling on the government to provide more support towards his farming business which he struggled to build over the last 15 years.

Aku Kulu made this call when sharing his experience during the Agriculture Minister's Seminar Series as part of the annual Agricultural Innovation Show on May 10 in Lae, Morobe province.

Mr Kulu was introduced to the pathogen tested sweetpotato, a method which uses disease-free planting material for optimum yield, and has been supplying sweetpotato to Port Moresby since 2008. Despite the labor, logistical and cost-related challenges, Mr Kulu has managed to sustain this thriving farm business with the support of NARI, Fresh Produce Development Agency through Market for Village Farmers.

He says there are other farmers who are struggling like him and more can be done to support the national government's initiative to commercialise agricultural farming using mechanised farming and infrastructure such as chilling facilities to improve the domestic supply and value chain of crops such as sweetpotato.

Mr Kulu's call for more support towards supporting struggling farmers, aligns to the national government's push for commercial farming, and is in line with NARI's AIS and Agriculture Minister's Seminar series theme, "Commercialising the PNG Agri-food System". Other stakeholders from universities, private, public and other agencies were present to



Aku Kulu displaying freshly harvested pathogen tested sweetpotato for the Port Moresby urban markets.

gauge views, interact and discuss possible initiatives to realising the pathway towards commercial agriculture in the country.

Climate Smart farm model draws interest

A farm model depicting 'climate smart agricultural' practices captured the attention and interest of a lot of people during the 13th annual Agricultural Innovation Show from May 9 to 10.

Natural Resources Management Scientist Ms Ruth Baiga expressed that it was a challenge in conveying information from a chart to people.

The farm model demonstrated various agricultural smart practices from irrigation, application of animal manure to improve soil fertility, installing a weather station to gauge weather information and making informed decisions. Ms Baiga was grateful that the information from the displayed posters to the



Ms Baiga displays the climate smart farm model.

farm model helped show participants understand what climate smart farming is and the practical management options they can use during extreme weather conditions such as drought and wet season.

AI5 in pictures



AIIS in pictures



NARI receives NASFUND award



NARI has been recognised by NASFUND as one of the best employers out of 25 organisations based in Lae, Morobe province.

NASFUND awarded NARI for its timely employer and employee remittances on May 13.

A team from NASFUND led by Ms Tanya Sawa formally presented the Employer Registration Certificate and Employer Discount Card to NARI's Corporate Services

Rice planter draws crowd

A good crowd turned up to witness the demonstration of rice planting, using a rice seed planter which has the capacity to carry 6 trays of rice seed at one planting time.

In line with this year's Agricultural Innovation Show theme, "Commercialising the PNG Agri-food System", farm machinery were used to conduct demonstration on planting crops like rice in the paddy field.

With a fuel capacity of 500 millilitres, the rice seed planter can plant 540 rice seedlings in one minute within two hundred square metres of land area.

The paddy rice seed planter is able to reduce up to 90 percent of labor compared to the manual transplanting method.

The rice planting machine can be easily transported and operated by two people.

This cutting-edge agriculture technology is set to revolutionize the agriculture sector by cutting back on manual labour, time and other related costs involved in rice farming at a commercial scale.

Rice is a staple for many Papua New Guineans and costs the national government about K900million annually to import rice.

Using farm machinery such as the paddy rice seed planter during the AIS, supports the national government's plan to venture into commercial farming of rice to reduce the cost of



Rice field staff setting the paddy rice seed planter for demonstration.



A close up of the paddy rice seed planter demonstration.

importing rice every year.

Sweetpotato field day at Usurufa a success

The introduction of a sweetpotato conservation project is not only bringing sustainable living but restoring peace after years of tribal fighting to the villages of Kamano local level government area of Kainantu district in Eastern Highlands.

For three years sweetpotato conservation was run for the local and introduced sweetpotato varieties through the support of Food and Agriculture Organisation, International Treaty for Plant Resources Genetic for Food and Agriculture in partnership with NARI and Awayabu Development Association Inc.

Through this project farmers are trained through Family Farm Team (FFT) approach which enables family units on decision-making, proper planning, time management, equal distribution of roles and responsibilities, nutritional balance, and practical strategies in running a family farm business.

In addition to the FFT approach, farmers were introduced to the concept of conserving local and introduced sweetpotato varieties as most of their local sweetpotato has been lost.

On May 29, a field day was hosted at the Irafo Community School of Kamano LLG to display various local and introduced sweetpotato varieties that were poly-crossed by farmers during the life of the project.

The event was also unique as farmers get to name the poly-crossed sweetpotato varieties with their own names, form a conservation committee, assign a variety to one farmer, and maintain a filled collection for seed distribution, food security, nutrition, health and income earning opportunities.

The conservation committee will be responsible in maintaining and distributing seeds through custodian farmers. Plant Breeder Bonney Wera has been very instrumental in helping the community learn, understand and realise the importance of conserving sweetpotato varieties for food security, and nutrition.

Highlands Regional Centre Manager Frank Mepe thanked farmers in taking ownership and initiative to conserve sweetpotato varieties in the field.

Awayabu Development Association Bonney Taiyo expressed that the sweetpotato conservation project will bring positive development to his community through income generating activities, nutrition and health benefits and enough varieties for food security in the event of extreme weather conditions such as drought.

Kamano LLG is looking forward to working closely with NARI and organisations to realise positive development. The Coffee and Industry Corporation, and the Kainantu Department of Primary Industry also officiated at the field day and offered to assist farmers.



Participating sweetpotato farmers displaying their acknowledgement certificates and signboard.



Ground breaking ceremony for the sweetpotato nursery building by Awayabu Development Foundation Inc President Bonney Taiyo and HRC Aiyura Centre Manager Frank Mepe.



Project signboard which will



Guests and NARI staff visiting poly-cross sweetpotato displayed by participating farmers.

Sweetpotato field day at Usurufa a success

In pictures



Sweetpotato field day at Usurufa a success

In pictures



Media plays an important role in information sharing

A one-day media workshop on how to report on soil, drought and food security issues in the face of climate change was made possible through the support of Internews, Earth Journalism Network in collaboration with NARI on June 10.

Media officers based in Lae were taken through presentations by technical officers from NARI including the proper use and definition of words such as drought.

Program Director Laurie Fooks expressed that there is a mix of information that is out there and by working with the media provides an avenue to properly examine, understand technical language and report correct information from the agriculture sector.

Proper and careful use of language such as the proper use of fertilizer, organic farming and reporting on success stories will support the government's push for commercial agriculture.

Soil Scientist William Sirabis expressed that one of the key issues affecting the agriculture sector from progressing is having access to reliable information that can help farmers make informed decisions.

Mr Sirabis explained that commercial farming can progress if farmers use fertilizer and disease-free planting materials for optimum yield for staples such as sweetpotato.

Natural Resources and Management Officer Ruth Baiga presented information on seasonal farming that is supported by weather information that supports agricultural production.

Ms Baiga expressed that uncertainty brought on through climate change is affecting the way farming is practiced in the country and needs weather information to guide farmers to make plans and informed decisions.

Other topics discussed during the workshop was the use of organic material such as coffee pulp, chicken manure, correcting the misconception of saying fertilizer is 'bad', use of terms such as drought, dry season, importance of irrigation, and how to improve soil fertility in order to get good yield.

The media officers expressed gratitude to EJM for the partnership with NARI and supporting the workshop. At the end of the workshop, the officers collectively expressed that more time should be considered for future workshops, to cover a range of topics and have



Lae-based media officers with NARI staff and Workshop Facilitator Rosa Koian who is seated in front (first from left).



A brief visit to the demonstration plots to see a small irrigation set up and food crops.



PNG FM Reporter Martha Louis providing feedback after the workshop.

relevant organisations participate and provide feedback to specific questions, and issues such as natural disasters among others.

EJM was set up in 2004 and is a global network of reporters from media outlets, which has a mission to strengthen local journalism through thorough research and correct misinformation on climate change and environment-related stories.

Black Soldier Fly, potential feed technology and waste management option



Adult Black Soldier Fly (*Hermetia illucens*)

The National Agricultural Research Institute is spearheading a scientific research in partnership with Fiji Ministry of Agriculture and the Vanuatu Agricultural Research Centre to investigate the potential of developing the Black Soldier Fly (BSF) as part of a regional project into a feed technology and organic waste management.

This project transpired after a team of researchers from NARI, the PNG University of Technology, Fiji Ministry of Agriculture, and the Vanuatu Agricultural Research Centre visited the International Centre of Insect Physiology and Ecology (ICIPE) in Nairobi, Kenya, on a fact-finding mission to learn more about the BSF and its economical benefits and see how best this technology can transform the agriculture sector in the region.

The BSF project is supported by the Australian Centre for International Agricultural Research (ACIAR) and ICIPE in collaboration with NARI, the PNG University of Technology, Fiji Ministry of Agriculture and Waterways, Vanuatu Agriculture and Research Technical Centre and other stakeholders.

The project's key objectives is to improve access to sustain production and make BSF available as a feed protein source, reduce organic waste and promote economical opportunities and progress to developing a business model for BSF farming.

A team of researchers from Kenya including youth entrepreneurs made a reciprocal visit to PNG, Fiji and Vanuatu to assess and provide technical assistance and the transition to making the BSF a potential feed technology and



Visit to the Bumayong Market outside of Lae City.



Visiting team at the Australian High Commission.

an option for waste management into useful organic waste within the agriculture sector.

The visiting delegation from Kenya left Papua New Guinea on July 4.

Breadfruit-more than just food

Food Systems in Papua New Guinea is under threat by rapid population growth and climate change. More than half of the population are already experiencing moderate to severe food insecurity.

As population grows, land becomes scarce for gardening or farming thus resulting in land being overused and food crops cannot produce enough yield to sustain the livelihoods of people.

Another factor affecting food crops is climate change. The normal traditional agriculture systems are under threat and people may not have enough food to eat.

This has prompted NARI to carry out studies into Breadfruit (*Artocarpus Altilis*), or *Kapiak* in Tok Pisin, belongs to the Mulberry family (Moraceae) which has been part of Papua New Guinea's agro-forestry systems for many years. According to *Wikipedia*, Breadfruit originated from New Guinea and introduced to other parts of the South Pacific and Southeast Asia during the colonisation period.

Although, breadfruit is a traditional food in Papua New Guinea, it is not recognised or eaten as a staple in the country. In other Pacific Islands, Breadfruit has been the source of food for many generations and they are now promoting its potential to cater for the Pacific community who are at the risk of experiencing food shortages due to impacts of environmental changes specifically in climate.

The objective of the project is to raise the profile of breadfruit production in coastal and island food systems in PNG. It will make people in PNG aware of the importance of breadfruit as a source of food and income generating crop and also to develop effective conservation strategies for this resource.

Breadfruit is mainly consumed by people in the Southern, Momase and the New Guinea Islands.

It grows very well in tropical dwellings and bears large fruits which are eaten in many different ways. It has over one-hundred-and-twenty known varieties and grows to heights of 9-18 meters with dark green leaves which are 20-90 centimetres long. Breadfruit matures at 6 years and starts bearing fruits from 9 to 45 centimetres in length and weighs up to 6 kilograms. The fruits are ready for harvest when they are yellowish green, some with seeds and others seedless depending on the variety.

The beauty about breadfruits is that they remain productive for over 50 years thereafter.

The targeted areas of visit to collect breadfruit varieties include Milne Bay, Gulf and Central in the Southern Region, Siassi and Finschhafen in Morobe, Madang, Wewak Islands in the Momase Region and New Guinea Islands, Duke of York in East New Britain, New Ireland, Manus, and the Autonomous Region of Bougainville (AROB).



Breadfruit Project Team meeting to set the scene for the August Workshop



A matured breadfruit.



Breadfruit tree.

The project will be officially launched with an Inception Workshop on the 20th and 21st of August at the Momase Regional Centre in Bubia, 10 Mile, Lae. The 4 year project is funded by the Food and Agriculture Organisation (FAO) and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).

Farmers taught livestock breeding skills

A week-long training workshop on small holder Livestock Breeding was conducted in the first week of June by NARI Scientists with an aim to impart to farmers new technology and methods used for optimum performances of their livestock.

The workshop attended by Farmers and senior Provincial Department of Agriculture (PDAL) officials from Morobe and Madang were taken through several modules of Livestock Breeding and Management specifically of Village Chicken, Duck, Sheep, Goat and Fish.

The main agenda was Village Chicken breeding and hatchery management. Farmers and officials were taken through different stages and process of breeding and hatching of eggs.

Livestock Scientist Elly Solomon explained to the participants that at the end of the workshop, they should be armed with skills to properly breed chickens, select a good breeding cockerel or hen and also importantly understand issues affecting their flock.

Solomon emphasised the need to keep the hens and roosters in good condition for fertilisation to take place.

He told participants that in order to keep the cycle going, they must identify a rooster that is highly productive to mate with a hen to produce eggs. He also stressed that hens will produce an egg regardless of a rooster's presence. Egg Hatching can be done in two ways, naturally and artificially. Mr. Solomon pointed out that naturally, the mother hen sits on her eggs to keep them warm to a certain temperature until they hatch. It takes approximately 21 days for the eggs to hatch.

The second method is artificial hatching and that is done by an incubator. Furthermore, Solomon added that it is also wise to breed Ducks alongside chickens as ducks can sit on a hen's eggs and hatch it faster than a mother hen. Farmers were also shown how to mix feed for chicken. Feed is made up of stock concentrate mixed with grated and dried cassava or kaukau for a balanced diet to keep the flock healthy.

Village chicken can be used for meat and eggs as protein and surplus sold to generate income for the family unit. Mr. Solomon cited the importance of nutrition as one of the major beneficiaries of breeding village chickens.

Apart from chicken breeding, the farmers also learnt about Ducks, Sheep and Goats and Fish breeding.

At the end of the workshop, NARI gave out chicken stocks to participants to take back to their respective settings and train local interested farmers in their districts.

The participants were from Bogia, Transgogol, Beon and Madang Provincial DAL, Menyamya, Teptep, Bulolo, Finschhafen and Morobe Provincial DAL.



Participants to the 'Participatory Learning and Action' workshop.



Group discussion exercise.



Some of the livestock posters displayed at the workshop.



Livestock Scientist Elly Solomon delivers a presentation on livestock feed.

Potato, a journey from seed to plate

The potato industry in Papua New Guinea sets on a long journey from NARI's Highlands Regional Centre laboratory in Aiyura, Eastern Highlands, to farmers who work closely with the Fresh Produce Development Agency (FPDA).

Have you wondered how potato production started before they reach urban markets, supermarkets and other clients?

Potato seeds go through tissue culture, a cleaning process through therapy to ensure there are clean planting materials from harmful pathogens that may affect potato yield.

The plantlets are transported by FPDA to screen houses which are purposely built in Tambul, Western Highlands for germination from 3 to 4 months, depending on the variety.

Once matured into mini tubers, they are supplied to 'mother seed growers' who play the role of distributing seeds to certified seed growers. Certified seed growers are trained and certified by FPDA inspectors and provide seeds to 'ware growers', who are involved in growing potatoes and selling in urban markets.

At present, E2 a long potato variety with creamy skin colour and white flesh was introduced by NARI, and widely distributed by farmers in Western Highlands, Simbu, Jiwaka and Eastern Highlands.

In order to get a good yield for potato, the best planting time is at the end of a dry season.

National Ware Potato Extension Development Program Manager Peter Kapal explains that NARI plays a crucial role in ensuring potato plantlets go through the tissue culture



A FPDA officer displaying sprouted seeds.



Potato plant sample.

process, before it reaches 'ware farmers' who are responsible for potato production. In order to reduce cost of importing potatoes, farmers mainly in the highlands region are encouraged to produce more potato and reduce dependency on imported potato. There are less than 50 seed growers in the highlands region where potato is mostly grown.



Potato seed farmer and Mr Kapal sorting out potato seed display

Services offered by NARI

The Professor John Kola Chemistry Laboratory offers a wide range of analytical and diagnostic testing services. We are a national chemical testing laboratory and have been operating for over 30 years.

Our laboratory is accredited to ISO/IEC 17025 which is a general requirement set by the International Organisation for Standardization (ISO) and International Electrotechnical Commission (IEC) for the competence in testing laboratories.

It certifies a laboratory as an Accredited Chemical Testing Laboratory under the ISO/IEC 17025:2005 Guidelines.

Prof John Kola Chemistry can perform chemical testing and all methods used are recommended by American Public Health Association (water), Australasia Soil and Plant Analysis Council (soil and plant), Association of Official Analytical Chemist (food and natural products).

**Prof John Kola Chemistry Laboratory
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Carbon Sulphur test using CS Analyzer



Nitrogen Test

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Western Pacific Guesthouse

Aiyura, Eastern Highlands

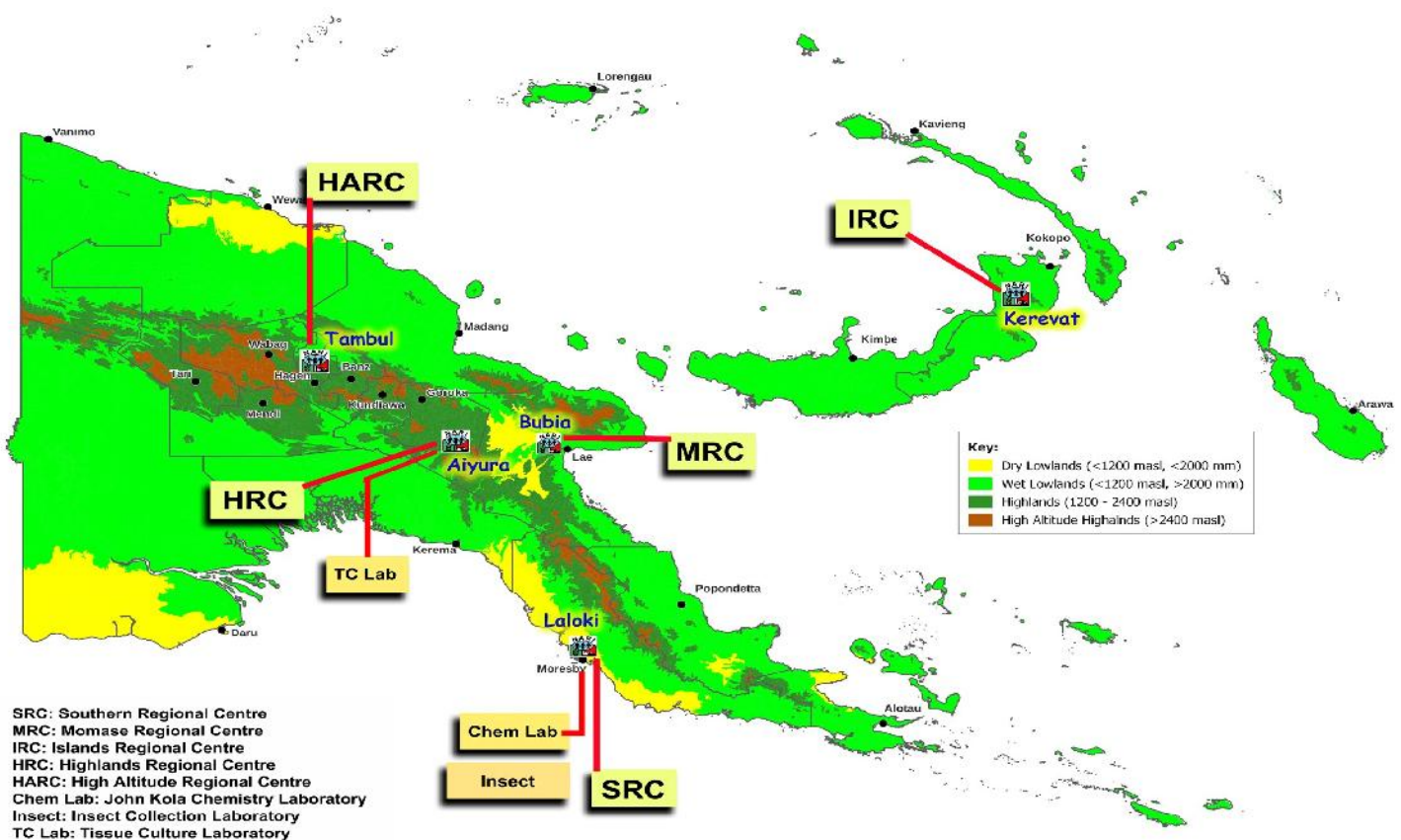
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The National Agricultural Research Institute (NARI) was established by an Act of National Parliament of Papua New Guinea (PNG) in July 1996 as a public funded, statutory research organisation, to conduct and foster applied and adaptive research into:

- any branch of biological, physical and natural sciences related to agriculture;
- cultural and socioeconomic aspects of the agricultural sector, especially of the smallholder agriculture; and
- matters relating to rural development. and of relevance to Papua New Guinea.