April 2019

Potato Systems Research and Training Center Inc.
a project of Sunrise Potato Systems Institute

Chronicles of Transformation

Be Involved

SPSI's Role in the Transformation of Communities

Rural development in the hilly and mountainous areas of Asia lags far behind the lowlands where irrigated and flooded rice predominates. Many factors play into this lag, primarily, lack of infrastructure and access to basic resources including crop inputs and financing. Markets are often far from the production areas and/ or they are controlled by middlemen.

The experience of SPSI and PSRTC over the past 3 years has shed much light on the challenges and the major constraints for the mountain farmers around Mt. Kanlaon. Provision of crop inputs on credit by PSRTC has been a huge success and is extremely popular with farmers. The use of the "Farmers Fund" has allowed it to grow and presently serve over 140 farmers. This clearly shows the impact and the need for rural credit sources. The other major learning is that with improved production practices by many farmers, we see larger harvests and thus depressed prices. Marketing of these products based on quality levels to upscale and local markets in some major cities is a clear priority that must now be addressed. We will start to do so in the coming months.

Dr. Peter VanderZaag with Bangladeshi trainees Kamendra Lal Tripura and Milton Chakma

The community transformation work is also ongoing in the Mountains of SW China focused on Potato production with bank credit financing. Similar work is about to start in the Chittagong Hill Tracts of Bangladesh amongst 2 tribal groups.

We live in exciting times where our examples of rural development are getting lots of attention and becoming a model for others to follow as well.

The stories and reports in this newsletter will highlight some of the great work around Mt. Kanlaon.

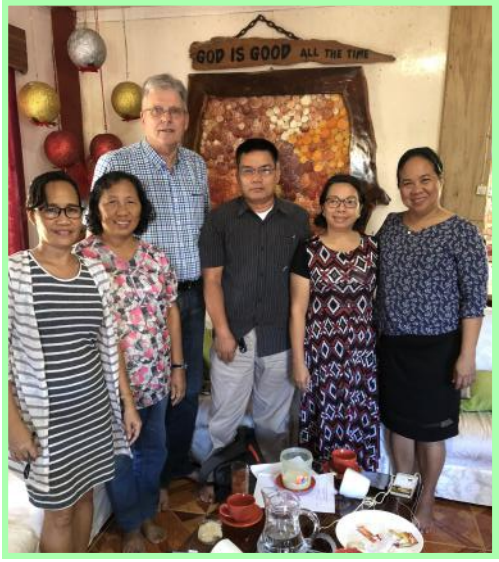
-Peter VanderZaag, PhD.

Presentation of Output and Planning Activities of Potato Farmers, Teachers of Cabagtasan Elemntary School, Bangladeshi Trainees, and PSRTC Staff with Dr. Peter VanderZaag

Meet the PSRTC Board

PSRTC has been operational since January 2016, however it is now registered with a Certificate of Incorporation as a non-government association by the Security and Exchange Commission of the Philippines as of November 15, 2018. The purposes of the organization are as follows:

1. Introduction, selection, and multiplication of new varieties of crops for Canlaon City and other farming communities;
2. Conduct research and develop appropriate and sustainable farming technologies that will increase productivity of potato and sweet potato grown singly or in combination with rotational crops;
3. Conduct trainings for farmers, academe, organizations, and individual both local and international to introduce sustainable farming practices, multiplication of quality materials, sustainable farming, and agribusiness;



First meeting of the PSRTC Board. From left: Jessica Nemeno, Victoria Demonteverde, Peter VanderZaag, Rodrigo Osorio, and Josie Trunio. Dr. Leoncia Tandang joined the meeting by video call.

4. Set up profitable and sustainable production and marketing network with farmers;
5. Promote spiritual and holistic development of farmers and their families;
6. Seek accreditation as learning site by Agricultural Training Institute, TESDA, or other accrediting body; and
7. Establish partnership with local and international organizations with mutual interest.

PSRTC Inc. is governed by a Board of Trustees that provides direction to its thematic programs. The officers are as follows: Dr. Victoria Demonteverde (President) Dr. Leoncia Tandang (Vice President), Jessica Nemeño (Secretary/Treasurer), Dr. Peter VanderZaag, Rev. Rodrigo Osorio, Herlyn Hernaez and Josie Trunio as Members of the Board of Trustees.

PSRTC, INC's priority for 2019 is reaching out to more individual farm families and communities. It will seek to translate the results of research output and technology into a viable agribusiness enterprises for individual farmers and farmers' organizations. It will expand its reach to academic communities, organizations, trainees and students.

Left : Signing of the Membership Book

Adoption of New Sweet Potato Varieties

Sweet Potato planted in Compound,

Three to four years ago, C1, the white flesh sweet potato was the predominant variety being sold at Uptown. Tapol, the purple with whitish stripes, is available but its quantity has dwindled and eventually lost in the market due to lack of demand. At present, there are different colored varieties being sold in the market . . . yellow, orange, and purple flesh (yellow and orange have higher nutritive values for Vitamin A and Purple is high in Antioxidants) with different shapes and skin colors are available at the market. What has brought about these changes?

This is PSRTC's contribution in the diffusion of sweet potato varieties. In 2016, twelve sweet potato varieties/clones from various sources (BSU, BPI-La Granja, UPLB-La Granja and farmers' local clones) were evaluated in the demo farm and 9 on-farm trials in the cities of Canlaon, San Carlos, and Guihulngan with a total of 9000 cuttings planted in July to August of 2016. From October to December of the same year, 7190 cuttings of selected clones were planted in 14 farmer's fields.

Initially, farmers selected the clones, Bokagan, Benqueta, Haponita, Benia Zuma, Immitlog, and NSIC 30 and considered them better in terms of taste and root characteristics than C1, the local check. Multiplication of the clones was also done by farmers in Cabagtasan and Guihulngan. In 2018, farmers finally selected 4 varieties (Immitlog, Benia Zuma, Haponita, and NSIC 30) for further multiplication.

Four groups with 52 participating farmers from different areas in Pula planted sweet potato vine producing nurseries of these varieties and members can ask for vine cuttings for planting. The farmers from Cabagtasan selected and continued to multiply the varieties Immitlog, NSIC 30 and Haponita. Farmers in this area sell the farm produce themselves as traders come to the place weekly to purchase their products.

These selected varieties are being distributed to interested neighbors, families, and friends, thereby rapidly increasing the production of differently colored varieties in Canlaon and nearby cities.

Sweet Potato chips made from the new varieties.

Camote delight made from the new sweet potato varieties.

Gardening A Lifelong Skills

Hands-on Activity on Rapid Multiplication of Sweet Potato

Agriculture is one of the pillars of the country's economy. In spite of its significance, little attention is being given to the agriculture sector. The interest of school children has diminished thru the years and only few pursue a career in Agriculture. Often children, even farmers' children consider farming as unprofitable and a lowly job. Hence, there is a need to encourage children to be able to appreciate and be involved in farming.

Mr. Bernabe B. Basalo together with the faculty and staff of Cabagtasan Elementary School conceptualized the project "Gardening As a Lifelong Skills" (GALLS). It is a "Gulayan sa Paaralan" project in partnership with Potato Systems Research and Training Center, Inc.

Foremost, the program aims to encourage the school children to participate and give importance to gardening as part of the curriculum with the supervision of our Edukasyong Pantahanan at Pangkabuhayan (EPP) teachers in partnership with Potato Systems Research and Training Center.

Likewise, to promote sustainable agriculture and help preserve the environment and support livelihood activities in the community through planting potato, sweet potato, flowers, and other crops.

The program was launched on July 19, 2018 with an orientation and hands-on activity on rapid multiplication of sweet potato thru single nodes cuttings. PSRTC provided 36 trays of rooted single cuttings of the varieties Immitlog, Benia Zuma, Benqueta, and Haponita. Initially, these 4 varieties were in-vitro plants from the Northern Philippines Root Crops Research and Training Center, Benquet State University, La Trinidad, Benquet. These plants were further multiplied by single node cuttings.

There were 30 pupils (5 boys and girls from each grade levels IV-VI) and 10 faculty and staff that were directly involved in GALLS. The group was able to plant sweet potato, corn, and other vegetables. They were able to harvest and children had experienced selling their products. Some sweet potato cuttings were sold to visitors from different schools and sweet potato recipe were sold whenever possible. Two farmers from Sitio Cabagtasan, Barangay Codcod, San Carlos City had planted the different varieties in their own farms using the cuttings from the school.

Principal and Teachers of Cabagtasan Elementary School with PSRTC Staff

The program promoted awareness to the 492 pupils on the importance of gardening and expose them to livelihood activities through planting of different crops.

Hopefully, in the future they can use the skills in the establishment of livelihood activities that can augment their family income.

Children and Teachers planting single node cuttings.

GALLS garden after planting single node cuttings (inlet) and updated later on December of 2018

Farm mechanization within the context of Conservation Agriculture

Conservation Agriculture (CA) is a set of soil management practices that minimizes the disruption of the soil's structure, composition, and biodiversity. Regardless of variation in the types of crops grown and management systems, CA shares 3 core principles namely: maintenance of soil cover; minimal soil disturbance and regular crop rotations (http://conservationagriculture.mannlib.cornell.edu/pages/aboutca/whatisca.html).

The Food and Agriculture Organization of the United Nations promotes the adaption of the CA principles as it is universally applicable to all agricultural landscapes and cropping systems and is a response to sustainable land management, environmental protection, and climate change adaptation and mitigation (www/fao.org/ag/ca).

"Conservation Agriculture in-practice" Field preparation using tractor drawn strip till equipment

These principles are being applied at the demo farm and we attest to its positive effects. When the farm was purchased in November 2013, soil samples were dug out in different areas to get an impression of the land. It was very clear that the soil on this farm were DEAD! There was no biological life nor earthworms in the soil samples collected. The soil was generally clayey and hard and very low in organic matter. The farm was a former sugarcane field converted into a tenant cultivated vegetable farm. Definitely, our first major challenge was soil health and fertility.

Corn stovers left in the field after harvest to serve as mulch for the next crop

How do we improve soil health, soil fertility and increase biological life? It was decided to plant corn in rotation with other vegetables and use corn stovers to increase soil organic matter. The use of the carabao and the plow was avoided or minimized. A sloping portion of the farm was designated as No Till field. Corn was the 1st crop planted in the farm and is subsequently used as rotational crops for potato, sweet potato and other vegetables. Minimum tillage was practiced. Vermicompost and chicken manure were also applied along with other fertilizer.

Cabbage seedlings planted using "strip till"

Instead of removing the whole cobs with husks from the stalks at harvest, only the cobs are taken off. Corn stalks were cut back after harvest and utilized as mulching materials or just left to decompose in the field. Grazing of animals after harvest was no longer allowed as in the usual farmer's practice. Concomitantly, corn serves as rotational crop for potatoes, sweet potato, lettuce, cabbage, onions, and other crops.

Farm mechanization within the context of Conservation Agriculture continued...

Soil taken 2013 (insert) and 2016

PSRTC's new thrust is to promote farm mechanization within the context of conservation agriculture. A tractor was purchased and the strip till equipment was brought from Canada. Larry Kell, SPSI Board member taught PSRTC staff how to do strip till. Initially, strip till is being used for corn. Concomitantly, planting in most areas is already mechanized using a tractor drawn strip till equipment followed by a manual corn seeder. In too hilly areas, a plow is used to make a furrow and manual corn seeder is used for sowing corn. At present, strip till is also being used for planting cabbage and lettuce.

A power sprayer is being used for spraying Glyphosate prior to planting and grass cutter to cut weeds in growing crops when necessary. The use of different tools and machineries reduced labor cost and improve farming efficiency.

A significant improvement in soil health was observed through the years, biotic life has increased and earthworms are everywhere. Soil texture improved and organic matter has increased. This year and onwards, PSRTC will further promote the principles of conservation agriculture and farm mechanization to other farmers. We look forward to more farmers trying to conserve their land using appropriate technologies that are profitable and sustainable.

The "Canadian" story

One day when Jessica, the Secretary/Treasurer of PSRTC, Inc. went to the Uptown market (Trading Post), a trader told her "There are many farmers that sells their products to me that gets their farm inputs from the "Canadian". Farmers call the facility "Canadian". This is a good tribute to the Canadian people who were earnest and with a benevolent heart to support the programs of the Center and to help the farmers. The thing called "Canadian" is the "Farmer's Fund" which is a credit facility for farmers. This fund was established to address the problem of insufficient capital in the adoption of technology for increasing farm productivity.

As of April 2019, 149 farmers have benefited from the program.

Epifanio Leano, one of the farmers that availed of the farmer's fund

Majority of loans were for farm inputs such as fertilizer, seeds, and pesticides. Some farmers requested loan for seed potatoes (12), pipes for irrigation (3), knapsack sprayer (1); set up of diffuse light store in Cabagtasan (1), purchase of utensils for food processing (1), and a group of children with 12 members for establishment of flowering plants. The fund was also used to finance the marketing of flowers, tuber seeds, and table potatoes.

Farmers consider this intervention very helpful as it provides them loans for farm inputs with a convenient and affordable payment scheme and minimal interest without collateral.

Trainees from Bangladesh

Trainings conducted in the center are need and impact based. Trainings are customized to meet specific needs of individual and groups to ensure its adaptability in their specific agro-ecological setting. In January to March of 2019, 2 trainees namely Milton Chakma and Kamendra Lal Tripura from the Chittagong Hill Tracts (CHT) came to PSRTC for an agricultural training. CHT consist of 3 districts (Khagrachari, Banderban and Rangamati) in the southeastern part of Bangladesh.

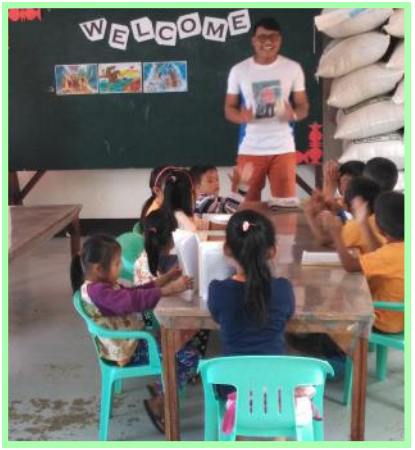
There are 12 ethnic groups, of which the Chakma and Tripura tribes are the main ones. These people groups lived quiet lives as slash and burn farmers in the rugged terrain of the CHT. The Indigenous people occupy the hilly rural areas and continue to survive with their traditional farming techniques. A small portion of the indigenous people have moved to the towns and cities and gotten government jobs and run businesses.

The Bangladeshi trainees Kamendra Lal Tripura (left) and Milton Chakma (right)

Training on asexual propagation of fruit trees in BPI, La Granja, La Carlota City

Digging hole for fish pond and learning about fish pond establishment

Learning about rapid multiplication techniques and preparing soil media



Kamendra teaching children in developmental activities

Milton with cabbage seedlings

The Trainees learned various aspects of crop production and rapid multiplication techniques for potato, sweet potato and cabbage thru apical cuttings. They prepared soil media for growing various vegetable seedlings. Farm management skills including: crop management, using farm tools, and efficient water management were in their training curriculum. A fruit trees nursery and fish pond were established. They practiced asexual propagation of various fruit trees. On top of this, they gained insight in Holistic Development Ministry by joining the child development program being implemented by Canlaon Bible Community Church-Lampara with sponsorship from Compassion International-Philippines.

The gains of the training will be applied in the Chittagong Hill tracts through the Sunrise Community Empowerment Program. The two Agricultural Technicians will work with the different tribes to empower them to be productive families and communities. Initial program components will be on water management, vegetables, fish pond and animals, farmers' fund (credit facility), and fruit trees.

Special thanks to Peter VanderZaag, Probir Tripura, Dirba Chakma, Ananta Tripura, RT Buckley and families who relentlessly supported them in this Journey. May God bless their efforts as they reach out communities with God's love and technology.

Kamendra in the sweet potato field during harvest

Potato Seed Production by Cabagtasan Farmers.

Seed producers from Upper Cabagtasan

In the 1980's, Canlaon City used to produce potatoes for Negros and the nearby provinces. However, the crop was devastated mainly by bacterial wilt and tuber moth. Both potato production and market had decreased through the years.

To address the problem, PSRTC worked on rapid multiplication technology to provide farmers with clean planting materials. It starts with tissue culture and use of apical cuttings from mother plants in the greenhouse. We have identified a group of farmers from Sitio Cabagtasan, Brgy. Codcod, San Carlos City where there is no Bacterial Wilt, who took the challenge of producing clean seeds for other farmers including Pula farmers.

Farmers that planted seeds from Cabagtasan indicated that the seeds produced from Cabagtasan were clean and they did not observe any bacterial wilt symptoms. Major reasons were seeds planted were clean and these were grown in the newly opened and isolated area at higher elevation. Yields were also increased. This shows that it is possible to revive the potato industry using clean planting materials that are grown in clean fields at higher elevation.

Tubers from Cabagtasan brought to Canlaon City

Farmers from Upper Cabagtasan with their seed tubers

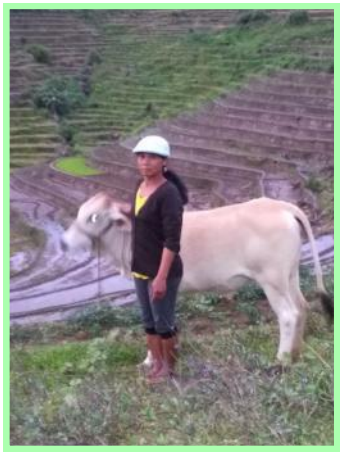
Seed storage facility at Upper Cabagtasan

Prosperity Fund

As its name suggest, Prosperity fund, envisions to help farm workers flourish financially by helping them in specific projects and encourage them to save. In May 2018, a prosperity fund was initiated thru funds provided by Canlaon Potatoes and Flowers Co. to be able to provide financial assistance to farm workers at the same time encourage them to save.

As of April 2019, 11 months after its establishment, there are 12 workers who have benefited from the program with loans ranging from 1,500 to 10,000 each depending on their expressed needs and capacity to pay. Ten of the borrowers had renewed their loans once.

Prosperity Fund continued…



Josephine Semillano with the cow purchased using the Prosperity Fund

Depending on the amount of loan, workers pay an affordable amount of 95 to 500 pesos with a savings of 15 to 52 pesos per week. Savings of workers earns an interest of 1% per month. The borrower determines the duration of loan and the amount to be saved per week. Loans were utilized for purchase of farm animals (cow, piglet, goats); pipes for drinking water, school fees and supplies; and to pay additional labor on their own farms.

An astounding example was Josephine Semillano, a single mom of 4 kids, who borrowed Php 10,000 to buy a cow. After six months, she repaid all her loan and with her earnings, she bought a pig and also installed an electrical connection to her house. Her children are now very happy for the additional amenity, which allows them to study their lessons at night.

The prosperity fund benefited the farm workers by providing them financial assistance to meet dire needs and improve certain aspects of their family's lives. Farm workers are happy as it allows them to save, invest, or to supply other family needs.

Holistic Activities for Farmers and their Children

"Train up a Child in the way he should go: and when he is old, he will not depart from it" -Proverbs 22.6.

Children are gifts from God and they need to be nurtured as well rounded individuals, with Christian conviction, love for the community and country. Children are the future and childhood education is very important as the principles they learn in childhood are generally carried into adulthood.

Geared towards the mission of holistic community development, the CBCC-Lampara ministry and PSRTC Inc. are partners in sharing the gospel to the children and their families. Because of the partnership of CBCC-Lampara and Compassion International-Philippines, the partner of CBCC-Lampara, there are 22 children with ages 5-7 years old and 3 home based that are in the sponsorship program. In total there are 40 children, (sponsored and unsponsored) that attends the weekly developmental activities.

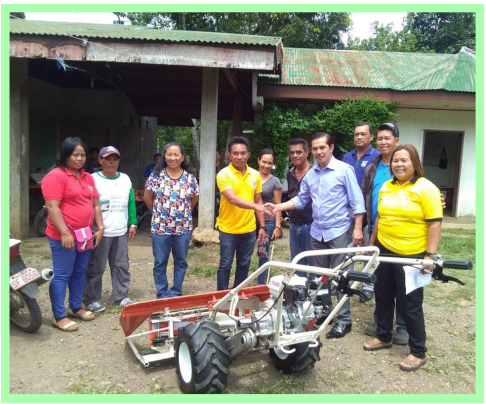
CBCC-Lampara summer kid's camp

Children enjoying lunch served by CBCC-Lampara

The goal is to provide learning opportunities for children to have physical, cognitive, spiritual and socio-emotional development. Sponsored children also receives medical, and educational assistance and other forms of support as needed.

Regular bible studies are held for parents and farm workers to develop in depth knowledge and relationship with God and to practice Christian stewardship.

PSRTC Bridging the Gap between Government and Farmers Organization



Turn-over of power tiller from the Department of Agriculture to PPVFA with Canlaon City Mayor Hon. Jimmy Jaime L. Clerigo and Mrs. Andrea Canoy, City Agriculturist

In its thrust to promote farmer to farmer network, PSRTC initiated the organization of Pula Potatoes and Vegetable Farmers Association (PPVFA), which was accredited by the Department of Labor and Employment on June 19, 2017. Total membership to date is 152. The members availed of the Farmers Fund, trainings, and other relevant programs. PSRTC provided technical assistance in the procurement of farm machineries from the Department of Agriculture (DA) such as 1 rice reaper, 1 floating tiller and 1 hand tractor.

Likewise, in PPVFA's participation in the DA's rice program wherein it is a recipient of hybrid and inbred rice seeds. Seeds from DA are free but farmers has to pay the association the cost of seeds at harvest.

Because of this program, PPVFA earned Php 61,500.00 for hybrid rice seeds and Php 26,540.00 for inbred rice. At present, there are 30 sacks of inbred rice seeds in storage at PSRTC and additional 5 sacks collectibles. The money will be used for future programs of the association.

On October 4, 2018**,** the Canlaon City Council through a Memorandum of Agreement agreed for a joint undertaking with PPVFA to operate the refrigeration system/cold storage facility of Canlaon City**.** In preparation, PPVFA officers visited the cold storage facility in Dumaguete City to benchmark on its operation at the same time seek technical support. Engr. Fortin from Dumaguete City has visited Canlaon City on March 29,2019 to look into the facility to be able to provide technical advice to PPVFA.

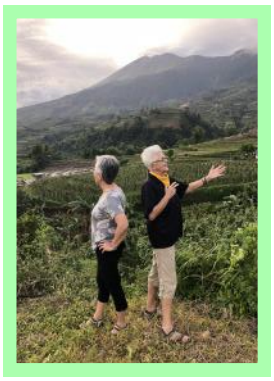
In addition, PSRTC promoted linkages for PPVFA with local government units and other organizations. PSRTC succeeded in encouraging farmers to unite for a common goal and to work together to achieve that goal. PPVFA thrust for 2019 is how to effectively utilize and maximize the support that was provided to them both by PSRTC, private entrepreneurs, and the government agencies.

Evaluation and Planning of PPVFA officers with Dr. Peter VanderZaag

PPVFA general assembly. Below are the rice reaper and rice seeds from the Department of Agriculture

Visitors and Field Trips at PSRTC

There were 5 field trips in 2018, these are Senior High students, Bakuka farmers, Dumaguete farmers, College students from Negros Oriental State University, and Graduate school students of Central Philippines State University. There were also various visits from different organizations and visitors from Victoria, Canada and Light New Hope, Hawaii, USA.



Visitors from Light New Hope, Hawaii

Senior High School OJT

Irene and Raymonde from Canada

Missionary Journey of Gene N. Gepulle and family

Visitors from Department of Trade and Industry

Bakuka Farmers Association, Guihulngan City

Senior High students from JBCMHS

Farmers from Dumaguete

Field Trip from Central Philippines State University

Bureau of Plant Industry, Baguio and La Carlota Team

Visitors from Provincial Agriculture Office

Be Involved!

Our lives, are just passing through, like a mist in the sky, however, the work we do will remain in the hearts of the recipients. BE INVOLVED in PSRTC activities thru the following:

Be a farmer cooperator
Be a farmer leader
Be a partner
Be an investor
Be a volunteer

The list are endless and knows no boundary. No act is small as any act of kindness can warm the hearts.

"Kindness is more than deeds. It is an attitude, an expression, a look, a touch. It is anything that lifts another person"

- C. Neil Strait

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To:

SPSI Board, Partners and Supporters

Thank You Very Much For All Your Support!

From:

PSRTC Family