



SUSTAINABLE DEVELOPMENT GOALS

13 CLIMATE ACTION



2022 REPORT

SDG 13 – CLIMATE ACTION



OUR ACTIONS

The Mountain Province State Polytechnic College, guided by its Vision, Mission, Goals and Thrusts, is true to its commitment of providing utmost services for the betterment of the people’s lives, and help in any way it can in addressing not only local issues but also global ones, and one of this is climate change issues and problems. Thus, with commitment and conviction, it provided activities and other significant endeavors to help in climate change mitigation and adaptation.

One of the significant arms in its fold is its Research and Development and Extension Sector. This sector was primarily given the responsibility to take charge of activities in relation to climate action – climate change mitigation and adaptation. This is in partnership with other concerned personnel, partners, national, regional and local partner agencies.

PROGRAMS / PROJECTS / ACTIVITIES

+ **Trainings/Capability Building/Seminars/Workshops**

In response to SDG 13, the Mountain Province State Polytechnic College held series of scheduled activities such as trainings, seminars, capability buildings, and workshops. These activities were geared towards capacitating farmers, faculty and staff, child development workers, community organizations, students, and coffee farmers.

- **Basic Life Support and First Aid Training**

To equip the Child Development Workers of Bontoc with the necessary knowledge and skills on basic life support, the Mountain Province State Polytechnic College in partnership with the Provincial Disaster Risk Reduction Management Center (PDRRMC) of Mountain Province and the Red Cross Unit conducted the Basic Life Support and First Aid Training on January 11-14, 2022 at the MPSPC College Auditorium. A total of 45 participants attended the training which comprised of 26 Child Development Workers and 19 MPSPC faculty members.

The topics and speakers were:

- First Aid and Quality Cardiac Pulmonary Resuscitation with proper application by Mr. Yaser Vincent Soria
- Emergency Action Principles by Mr. Crismar P. Farnican
- Cardiac Emergencies by Mr. Sohrab M. Mi-ing
- Airway and Breathing Emergencies by Mr. John Alan C. Yog-a
- Bleeding and Shock, & Soft Tissues’ Injuries and other modules by Mr. Jonas K. Chumacog

On the other hand, faculty members of MPSPC were given separate sessions from the Child Development Workers as their needs vary from the CDW.

The topics and speakers for the faculty participants were:

- First Aid and Basic Life Support by Mr. Dominador S. Pangod
- Emergency Action Principles by Mr. Leophin A. Gayec
- Cardiac Emergencies by Ms. Florita A. Sacgaca
- Correct Application of Quality CPR by Mr. Leophin and Mr. Dominador



First Aid Management for airway and breathing emergencies for adults and infants.



○ **Capability Building on MPSPC Compost and Botanical Pesticide**

Farmers need to be fully equipped with the necessary knowledge and skills to help them be able to use and devise other farming adaptive measures in their organic farming. Thus, a training on Capability Building on MPSPC Compost and Botanical Pesticide was initiated by the Mountain Province State Polytechnic College on June 26, 2022 at Baang, Bauko, Mountain Province. This was facilitated by the MPSPC RDE and Staff with Mr. Elmer D. Pakipac, MPSPC Extension Director, as its lead proponent. He was further assisted by BAT – 4th year students and participated in by the 15 Lagawa farmers and workers.

The aim of the activity was to develop alternative source of nutrients in the form of compost among farmers. It further aimed to make the BAT graduating students harness their skills through practicum activities.



- **Technology Utilization Field Day**

In response to climate change mitigation and adaptation, to address the issue of inadequate supply of clean planting materials, and in support to CHED-CAR program that encourages State Universities and Colleges (SUCs) in the region to pitch in to providing nutritious food to the community so as to ease the impact of the COVID-19 pandemic in the region, a technology utilization through field day was conducted on March 30, 2022 as part of the Extension project titled “LEARN and SHARE: A Community Pantry of Mountain Province State Polytechnic College.

This was held in Lao-ingan Demo Farm, Lagawa with Lao-ingan – Ad-adugan Organization members (farmer organization) as participants. Various adaptable technology and different farming systems in legume crop production were discussed and implemented. Mr. Elmer D. Pakipac, MPSPC Extension emphasized on the significance of the gaining of significant knowledge on different legume crop production so that the farmers can be able to improve yield quality and quantity most especially that the country is facing climate change issues and problems on crop production.



Mr. Elmer D. Pakipac explaining the various methodologies they used in planting legumes.



Participants of the organization listening attentively to the discussion of Mr. Elmer D. Pakipac.



Mr. Elmer D. Pakipac sharing his insights regarding the different farming systems they used in the experiment.

○ **Coffee Plantation Establishment and Management Training**

A coffee plantation establishment and management training was held at Antadao, Sagada, Mountain Province on April 29-20, 2022 which was participated in by 20 Western Red Berry Pickers Association members and in-coming coffee farmers. This activity was conducted by the Mountain Province State Polytechnic College faculty to equip farmer organization members with the necessary knowledge and skills on coffee plantation establishment and management where lecture discussions and demonstrations were shared most especially on the following topics: the agronomic characteristics of different coffee varieties came next followed by the lecture on farm preparation such as, farm planning, site selection, soil sampling and field planting were shared. Moreover, crop maintenance, activities and coffee pest and disease discussions were also part of the topics discussed and explained.

Field demonstrations ensued after all the lecture discussions.

Lecturers were ACDI-Voca Coffee Mentor Mr. Ricarte Guitilen, Mr. Domingo L. Lawagey, and Dr. Alver W. Claudio.



Uprooting malnourished coffee tree



Showing the unhealthy tree caused by root balling



Fertilizer application (basal)



Proper planting

- **Training on Propagation of Fruit Trees Through Grafting and Marcotting**

The Mountain Province State Polytechnic College (MPSPC) - Extension Unit Services have a program which consists of three components namely: (1) Departmental Cluster programs, Baangan Learning Nest and the Project-based Extension. The Baangan Learning Nest was established to serve as a demonstration and training ground for the students and farmers. Currently, the demo farm has an existing horticultural fruit trees specifically citrus trees which can be utilized for grafting and marcotting training.

The three day training was organized by the Extension Services Unit led by Mr. Elmer D. Pakipac, Director of Extension Services Unit in collaboration with the Department of Agroforestry and Forestry (DAF) headed by Dr. Linda I. Guinabang. Ms. Jocelyn Assayco, faculty member from DAF was invited to be one of the resource speakers of the training.

Participants who attended the training were from the Lao-ingan - Ad-adugan Women's Organization, Bawi Young Mother's Organization and students from the Department of Agroforestry and Forestry (DAF).



Mr. Elmer D. Pakipac demonstrating how to marcott citrus trees.



Participants who are actively applying what they learn from the field demonstration.

- **Soil Sampling and On-Farm Facility Management for Arabica Coffee Farmer Collaborators of MPSPC**

The extension activity of Agroforestry and Forestry on Soil Sampling and On-farm Fertility Management for Arabica Coffee Farmer Collaborators of MPSPC was held on September 9, 2022 at Sagada, Mountain Province with a total of 25 participants. Among the 25 participants were the 15 members of WRBPA and MBC personnel.

The activity was conducted in eight (8) coffee farming sites at Kilong and Antadao, Sagada, Mountain Province.

○



Collecting of soil samples



Measuring the NPK of the soil where the samples were collected using the NPK soil probe

○

○ **Training-Workshop on Building a community-based Gender Sensitive Climate Resilience Plan for Chico River Organic Practitioner Organization**

In its desire to developing resilient communities within its service areas, the Department of Agroforestry (DAF) of the Mountain Province State Polytechnic College conducted an extension activity on *Training-Workshop on Building a community-based Gender Sensitive Climate Resilience Plan for Chico River Organic Practitioner Organization* on October 15, 20-21, 2022. This activity is under the BATAWA (Backyard Farming, Techno-demo in Agroforestry and Agriculture, and Watershed Management for Adaptation) extension program of the said department with a PASI - *Promotion of site specific S&T generated by the College, Advocacy of best practices in response to climate change in the field of agriculture, Sharing of expertise through technical advisories.*

This was held at the KALAHI Multi-Purpose Hall, Suyo Monamon Norte Bauko, Mountain Province with Chico River Organic Practitioner Organization (CROPO) members as participants. The topics discussed and shared were:

- Climate crisis in the Philippine agriculture
- Climate Histogram and Climate resource mapping
- Hazards affecting the community and the members of the organization and Climate Resilience Plan



Ms. Agnes Banwa, president of CROPO giving her welcoming remarks



Ms. May Crisline V. Gumihid, Community Relations Officer B of Extension Unit giving the overview of the activities



Mr. Elmer D. Pakipac, DAF faculty member lecturing about the climate crisis being experienced at present



CROPO members and officers eagerly listening on the lecture

- **Training on Basic Tips of Plant Disease Diagnosis and Management**

The Agroforestry and Forestry Department in collaboration with the MPSPC Extension Unit conducted a training on Basic Tips of Plant Disease Diagnosis and Management on November 10, 2023 at the Victor S. Dominguez Research and Training Center, Banao, Bauko, Mountain Province. This activity was attended by a total of 42 participants. Twenty (20) BAT students, eleven (11) Bawi Young Mothers Organization, and eleven (11) Lao-ingan ~ Ad-adugan Organization. The Resource Speakers in this activity were Ms. Rechelle B. Peningeo, an expert in Plant Pathology at the same time, a staff of Extension Unit and Mr. Elmer D. Pakipac, a faculty member from Agroforestry and Forestry Department.

The discussions and demonstrations focused on plant diseases affecting crops of the locality and its management.



Ms. Rechelle B. Peningeo (*left*) was preparing the specimen.



The students identifying the sign of pathogen with the aid of microscope



The group of Bawi Young Mothers Organization comparing the symptom of diseases of the specimens collected based on their resource reference.

Mr. Elmer D. Pakipac was delivering his welcome remarks.



Ms. Crisline V. Gumihid was giving the overview of the activity.



Ms. Rechelle B. Peningeo (*left*) and Mr. Elmer D. Pakipac (*right*) were giving their lectures on Plant Diseases affecting crops of the locality and its management.

○ **Training on Post-Harvest Handling for Sagada Coffee Growers**

As part of its vital role in spurring development in the province, the Mountain Province State Polytechnic College conducted a training on post-harvest handling for Sagada Coffee Growers at Sagada, Mountain Province on November 15-16, 2023. This was headed by the project leader of the project: Development and Evaluation of the Colorimetric Chart for Coffee Fruit (*Coffea Arabica* L.) (DECCCORD), Mr. Rolando Jr. M. Tawanna together with her research staff, Ms. Isabel O. Baniaga; Ms. Joveliza L. Galsi and Ms. Hazel Ann D. Buy-o. This training is in collaboration with the Office of the Municipal Agriculturist of Sagada, ACDI-VOCA represented by the Regional Coordinator for CAR, Ms. Christine Abellon and the Extension Unit represented by the Communication & Knowledge Management Officer of the unit, Ms. Rechelle B. Peningeo.

Topics and speakers were:

- Cherry Anatomy by Ms. Hazel Ann D. Buy-o
- Standards in Harvesting, Postharvest and Processing of Coffee by Ms. Joveliza L. Galsi
- Standard Coffee Procedures with demonstration by Mr. Rolando Jr. M. Tawanna and Ms. Christine Abellon
- Drying, Hulling, Storage, and Warehousing by Ms. Isabel O. Baniaga

Hands-on training for soring and cupping was also done at the SACGPO in Makamkamlis, Patay, Sagada.



Ms. Scarlet B. Mayapit, Senior Agriculturist of the Office of Municipal Agriculturist of Sagada



Ms. Christine Abellon, ACDI-VOCA Regional Coordinator for CAR



Ms. Hazel Ann D. Buy-o, research assistant of DECCCORD project discussing the Introduction of Cherry



Ms. Joveliza L. Galsi, research assistant of DECCCORD project discussing the Standards in Harvesting, Postharvest and Processing of Coffee



Ms. Isabel O. Baniaga, research assistant of DECCCORD project discussing the Drying, Hulling, Storage, and Warehousing



Mr. Rolando Jr. M. Tawanna, project leader of DECCCORD project discussing How to identify defects; How to sort and grade and importance of cupping

○ **Field Day on harvesting Air-Layered Lemon and Integrated Backyard Orchard Establishment**

In order to train farmers on proper preparation of area for planting fruit trees in their backyard and proper harvesting of air layered planting materials from the mother trees, a training on harvesting air-layered Lemon Tree and integrated backyard orchard establishment were conducted on November 30, 2023 at the Victor S. Dominguez Research and Training Center, Banao, Bauko, Mountain Province. with Extension Unit conducted a training on Harvesting Air-layered Lemon Tree.

This activity was attended by a total of 40 participants. Seventeen (17) BAT students, Nine (9) Bawi Young Mothers Organization, and Ten (10) Lao-ingan ~ Ad-adugan Organization. The Resource Speakers in this activity were Mr. Elmer D. Pakipac, Ms. Jocelyn Assayco, and Dr. Linda Guinabang, all faculty member of Agroforestry and Forestry Department who are experts in the field of Agriculture.

Lecture, discussions, and demonstrations centered on:

- Orchard Establishment
- Harvesting air-layered lemon



Mr. Elmer D. Pakipac was giving his lecture on Orchard Establishment.



Demonstration on digging of hole where lemon will be planted.



Basal fertilization using compost/green manuring



Harvesting of Air-layered Lemon

Researches on Climate Change/Climate Action

One of the significant measures the Mountain Province State Polytechnic College significantly identified to help address climate change adaptation and mitigation and all other – related climate change issues and problems is the conduct of research and research project collaborations. It is through these activities that MPSPC was able to contribute responsibly to addressing climate change issues/problems.

The following are the researches done and all other activities surrounding the researches:

Title of Research	Author	Date Completed	AIHR	Presentation			Publication		
Disaster Risk Reduction of Climate Change Impact in Agricultural Farms in Mt. Province	Elmer D. Pakipac	2019	August 29-30, 2019	10th Regional Symposium on R&D Highlights, Industry, Energy, Emerging Technologies, Social Sciences and Education December 9-10, 2020 - Virtual Conference - 2020					
Vulnerability and Adaptive Capacity to Climate Change of Rice Based Agro-ecosystem in Mountain Province	Rexton F. Chakas, Sean Camelon A. Ligligen, Joel C. Faroden, Susan A. Lopez, Marcelino Gaqui	2017	July 5-6, 2017	1st International Forum on Innovations for Indigenous Peoples' Empowerment and Social Transformation - April 5-7, 2018 - Teng-ab Pastoral			September - December 2017	MPSPC College Journal	Vol. 17 No.3



SUSTAINABLE DEVELOPMENT GOALS

13 CLIMATE ACTION



				Complex, Bontoc, Mountain Province					
Project Title: Ensuring Water Security and Climate Change Resilience for Mountain Indigenous Communities of the Cordillera - Optimization of Existing Water Supply Distribution System using Technology-Based Tools in a Rural Community of Mountain Province, Philippines	Epiphania B. Magwilang, Francisco Armas, Annie Lourie Paredes, Helen Grace Bugnay, Rose Dagupen	2022	October 19-20, 2022	12th Joint Regional Symposium; 5th Student Congress; and 7th Joint Farmers Technology Forum on RDE Highlights	November 21 -24, 2022	Benguet State University, La Trinidad, Benguet			
Project Title: Ensuring Water Security and Climate Change Resilience for Mountain Indigenous Communities of the Cordillera -	Epiphania B. Magwilang, Francisco Armas, Annie Lourie Paredes, Helen Grace Bugnay, Rose Dagupen	2022	October 19-20, 2022	12th Joint Regional Symposium; 5th Student Congress; and 7th Joint Farmers Technology	November 21 -24, 2022	Benguet State University, La Trinidad, Benguet	H ₂ Open Journal	Vol.6, No. 2, 242	Jun-23



Physico-Chemical and Microbiological Assessment of Domestic Water Supply in Bontoc, Mountain Province - Challenges Faced by the Municipal Water Works Management in Improving Water Supply Adequacy and Distribution in Bontoc, Mountain Province				Forum on RDE Highlights					
Project Title: Ensuring Water Security and Climate Change Resilience for Mountain Indigenous Communities of the Cordillera - Analysis of Water Consumption using GIS Spatial Statistical Tools: A Case in Bontoc, Mountain Province	Epiphania B. Magwilang, Francisco Armas, Annie Lourie Paredes, Helen Grace Bugnay, Rose Dagupen	2022	October 19-20, 2022	12th Joint Regional Symposium; 5th Student Congress; and 7th Joint Farmers Technology Forum on RDE Highlights	November 21 -24, 2022	Benguet State University, La Trinidad, Benguet			



SUSTAINABLE DEVELOPMENT GOALS

13 CLIMATE ACTION



<p>Project Title: Ensuring Water Security and Climate Change Resilience for Mountain Indigenous Communities of the Cordillera - Physico-Chemical and Microbiological Assessment of Domestic Water Supply in Bontoc, Mountain Province - Challenges Faced by the Municipal Water Works Management in Improving Water Supply Adequacy and Distribution in Bontoc, Mountain Province</p>	<p>Epiphania B. Magwilang, Francisco Armas, Annie Lourie Paredes, Helen Grace Bugnay, Rose Dagupen</p>	<p>2022</p>	<p>October 19-20, 2022</p>						
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SUSTAINABLE DEVELOPMENT GOALS



✦ Project Collaborations

- Safe and Secure Water Supply for Mountain Indigenous Communities is the broader program
- This research project is in collaboration with DOST-CAR. It is an externally funded research activity where MPSPC was given the charge to implement and complete the project in accordance with the R&D & project proposals for the attainment of the project's objective and outputs indicated in the project summary. From here emanated the following measures and research initiatives of MPSPC:

2	<p><i>Project Title: Ensuring Water Security and Climate Change Resilience for Mountain Indigenous Communities of the Cordillera</i></p> <p>Physico-Chemical and Microbiological Assessment of Domestic Water Supply in Bontoc, Mountain Province</p>	Epiphania B. Magwilang, Francisco Armas, Annie Lourie Paredes, Helen Grace Bugnay, Rose Dagupen
3	Challenges Faced by the Municipal Water Works Management in Improving Water Supply Adequacy and Distribution in Bontoc, Mountain Province	
27	<p><i>Project Title: Ensuring Water Security and Climate Change Resilience for Mountain Indigenous Communities of the Cordillera</i></p> <p>Optimization of Existing Water Supply Distribution System using Technology-Based Tools in a Rural Community of Mountain Province, Philippines</p>	Epiphania B. Magwilang, Francisco Armas, Annie Lourie Paredes, Helen Grace Bugnay, Rose Dagupen
28	Analysis of Water Consumption using GIS Spatial Statistical Tools: A Case in Bontoc, Mountain Province	

These researches were even presented in local and regional for a. The presentation of these researched in different for a is a form of information dissemination measures of MPSPC with results being shared to others as a contribution and help for them to be water-secured and climate resilient.

✦ Research Utilization

Research outputs were also utilized which proves that MPSPC is on its track of providing support and solutions to climate issue.

Research Output/Technology	Titles of Research	Utilizing Community/Organization/Agency
2 Rainwater Harvesting Tank Sweetpotato cuttings technology	Disaster Risk Reduction of Climate Change of Vulnerable Farms in Mountain Province	Farmers of Fon-i Farmers Organization