



INDIGMEC2 CONFERENCE  
SÁMI ALLASKUVLA  
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**FORMULATING AN  
INDIGENOUS CURRICULUM FRAMEWORK  
FOR INDIGENOUS PEOPLES' EDUCATION  
IN THE PHILIPPINES**

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# STORY OF OUR JOURNEY ON INDIGENOUS PEOPLES EDUCATION

**01**

WHERE I'M FROM & WHERE I COME FROM

**02**

THE INDIGENOUS PEOPLES OF THE PHILIPPINES: A HISTORY OF DISADVANTAGE & NEGLECT

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**07**

INITIAL INSIGHTS AND INTO THE 2<sup>ND</sup> DECADE

I pay my respects to the traditional custodians of this Sami land, as well as the custodians of the land where I come from.

I acknowledge our elders, leaders and knowledge holders in both our cultures.

Past, present and emerging.



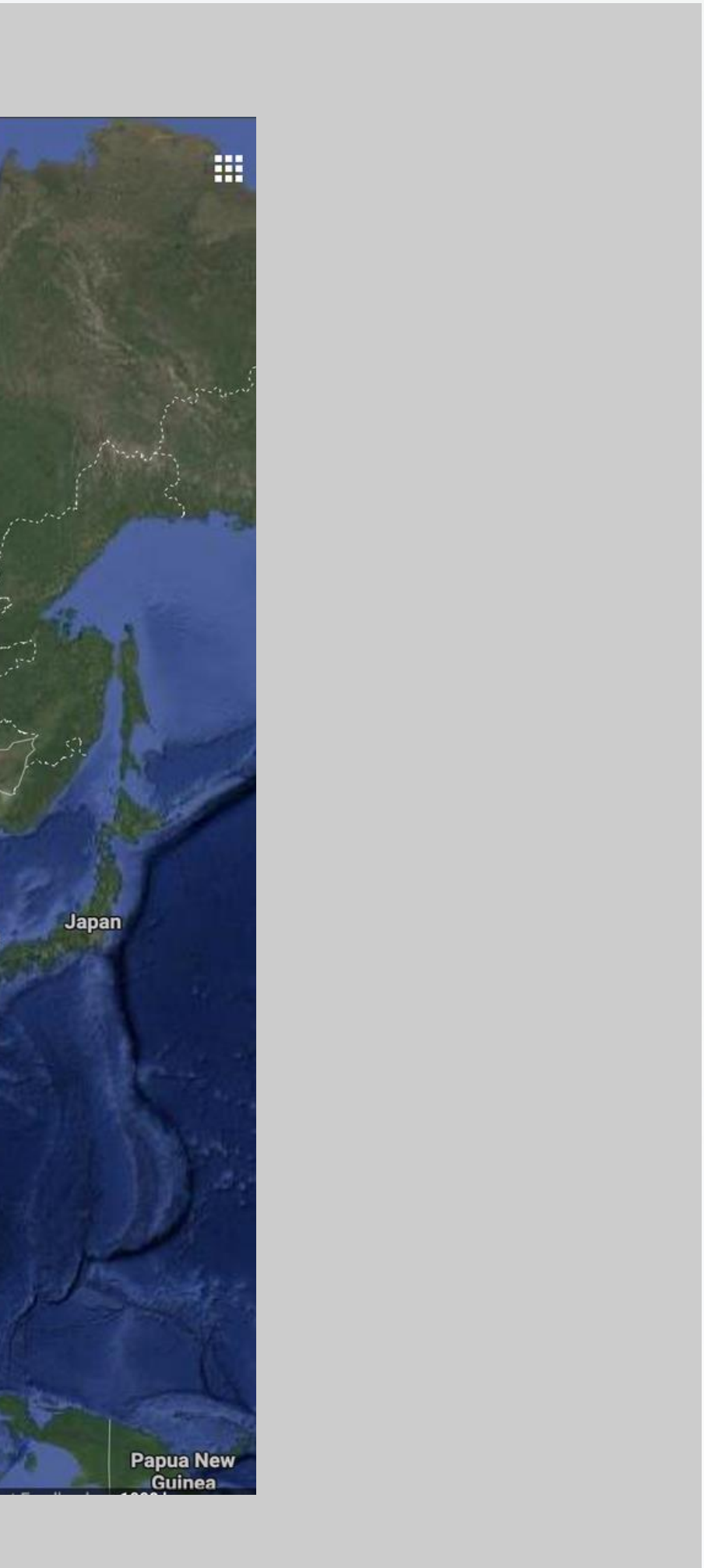
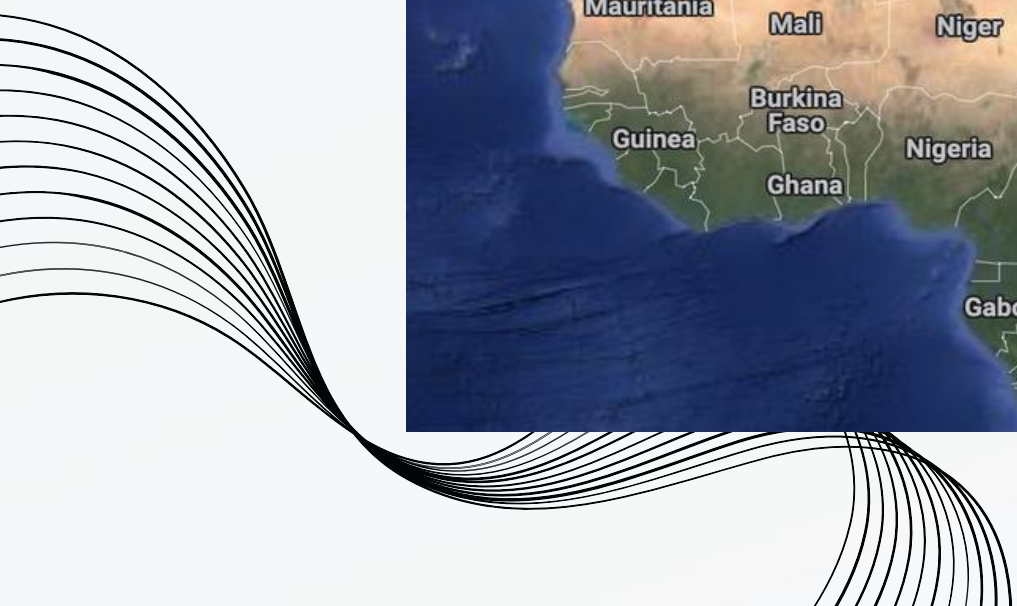
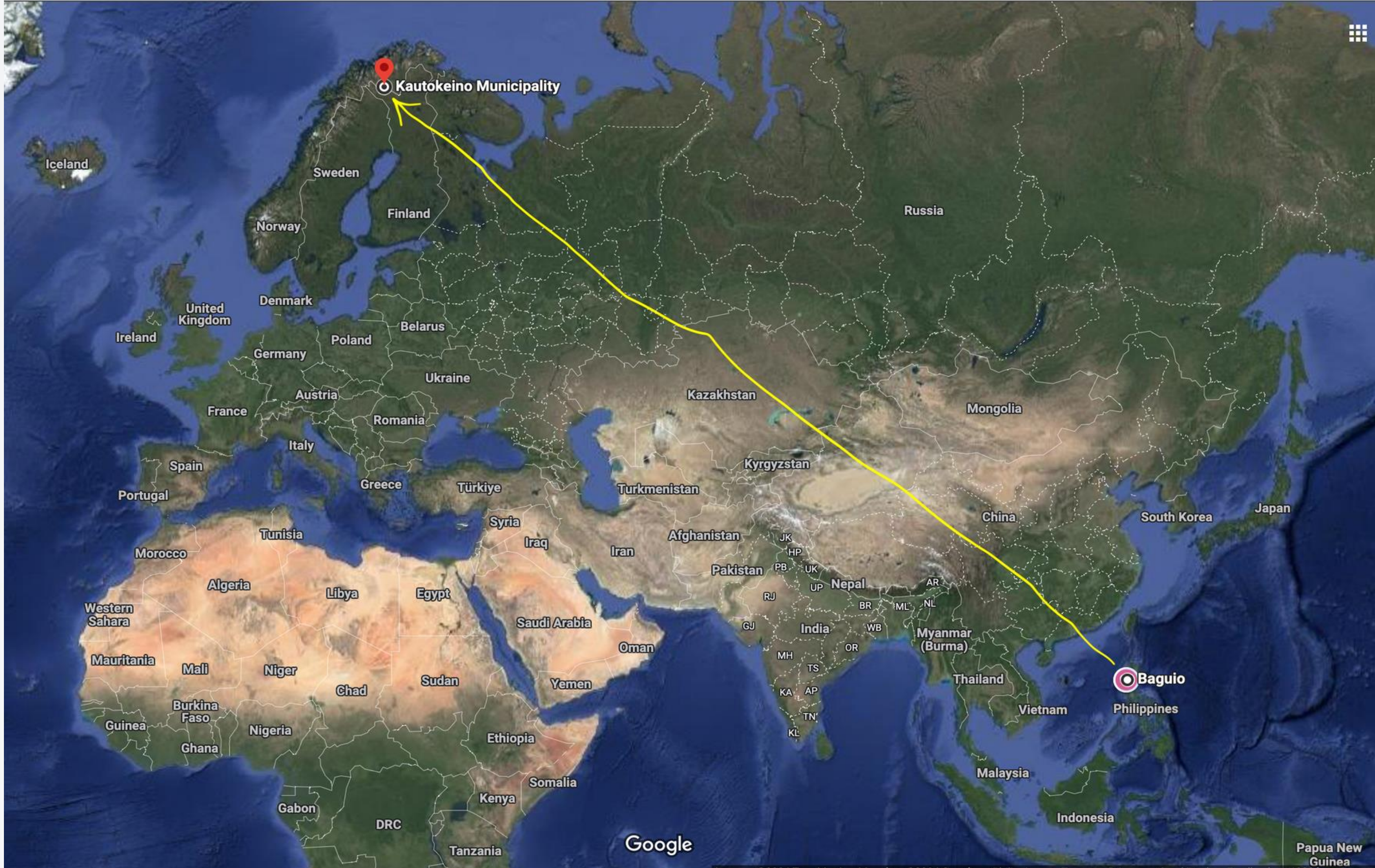
# WHERE I'M FROM



7640 Islands  
About 2000 are inhabited  
Capital City: Manila  
Baguio City is 243 km from Manila  
Part of the Cordillera Administrative Region

CAR is home to more than 1.5 million indigenous populations, consisting of more than 15 diverse ethnolinguistic groups, and counting.

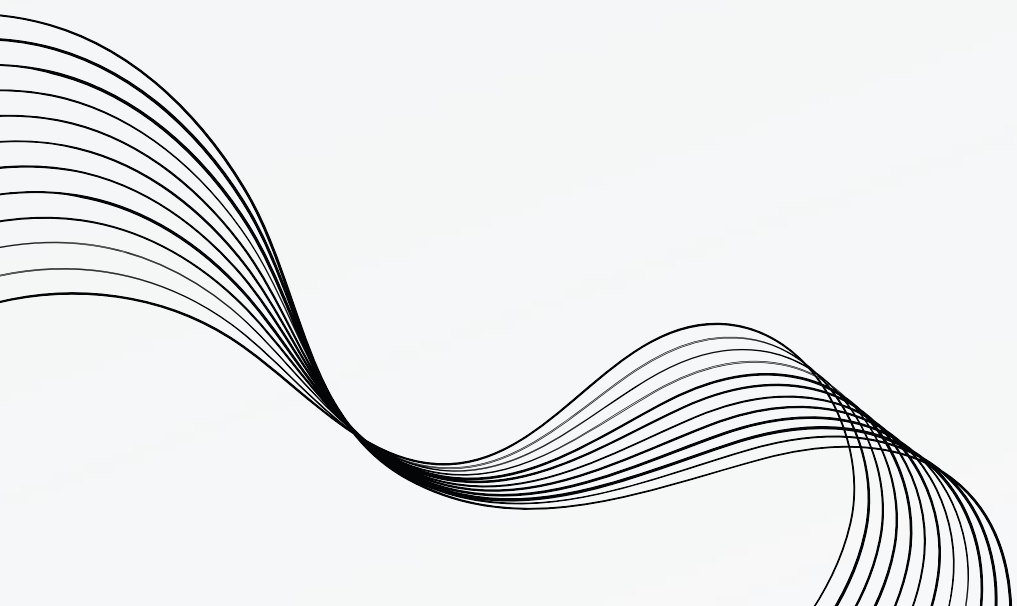
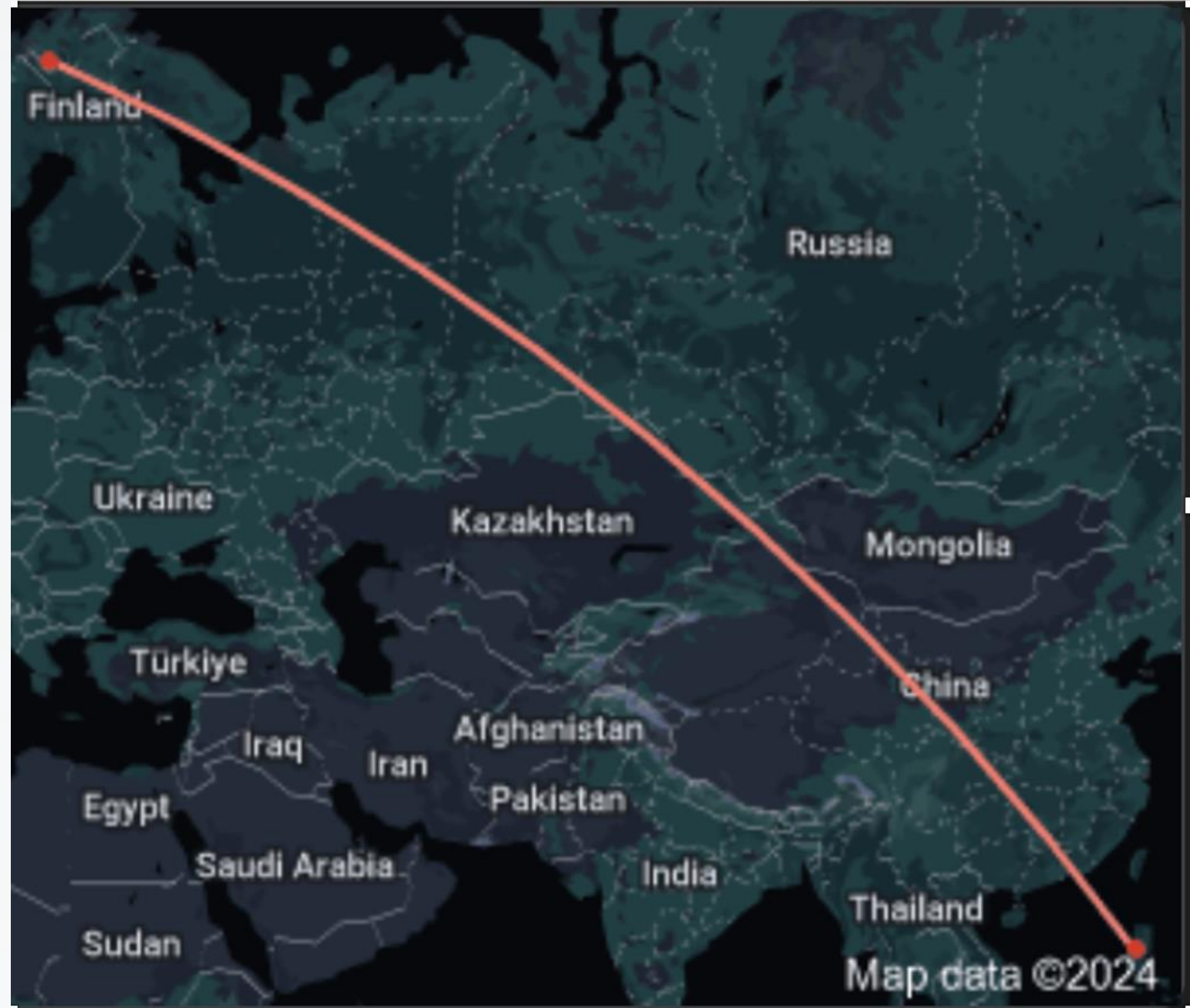
# WHERE I'M FROM



# WHERE I'M FROM

8,599 km

Distance from Baguio to Guovdageaidnu





A Kankana-ey-Ilocano  
from the Philippines

My research interests  
and advocacies are  
defined by my  
identities as an  
indigenous person,  
mathematician,  
mathematics educator  
and activist





## The Indigenous Peoples of the Philippines

- Around 110 ethnolinguistic groups that may be identified as IPs; estimated to be 15M-20M (National Commission on Indigenous Peoples - NCIP)
  - 33% in the Luzon group of islands;
  - 6% in the Visayas group of islands; and
  - 61% Mindanao group of islands
- (NCIP, 2011; ECIP, 2006)



# THE INDIGENOUS PEOPLES OF THE PHILIPPINES

## Ethnographic Map

### CORDILLERA AND REGION I

Bontoc, Balangao, Isneg, Tingguian, Kankanaey, Kalanguya, Karao, Ibaloi, Ayangan, Ifugao, Tuwali, Kalinga, Yapayao, Bago, Gaddang

**33% in Luzon**

### ISLAND GROUPS

Agutaynon, Tagbanua, Dagayanen, Tao't Bato, Batak, Palawanon, Molbog, Iraya Mangyan, Hanuno Mangyan, Alangan Mangyan, Buhid Mangyan, Tadyawan Mangyan, Batangan Mangyan, Gubatnon Mangyan, Ratagnon Mangyan, Cuyanon, Ati, Sulod/Bukidnon, Magahat, Karolanos, Ata, Bukidnon, Escaya, Badjao

**6% in Visayas**

**61% in Mindanao**

**NORTHERN AND WESTERN MINDANAO**  
Subanen, Talaandig, Higaonon, Matigsalog, Umayamnon, Manobo, Kamigin, Yakan, Sama, Badjao/Sama Laut, Kalibugan, Jama Mapun, Tausug

### LEGEND:

- CAR and REGION I
- REGION II
- REST OF LUZON
- ISLAND GROUPS
- EASTERN & SOUTHERN MINDANAO
- CENTRAL MINDANAO
- NORTHERN & WESTERN MINDANAO

### REGION II/CARABALLO MOUNTAIN RANGE

Agta, Kalanguya, Bugkalot, Isinai, Gaddang, Aggay, Dumagat, Ibanag, Itawis, Ivatan

### REST OF LUZON/ SIERRA MADRE MOUNTAIN RANGE

Aeta, Negrito, Baluga, Pugot, Abelling, Agta, Dumagat, Remontado, Bugkalot, Cimaron, Kabihug, Tabangnon

### SOUTHERN AND EASTERN MINDANAO

Manobo, Mandaya, Mansaka, Dibabawnon, Banwaon, Bagobo, Ubo Manobo, Tagakaolo, Talaingod, Langilan, Mamanwa, Higaonon, B'laan, T'boli, Kalagan, Tagabawa, Manobo Blit, Matigsalog, Sangil, Tigwahanon

### CENTRAL MINDANAO

Aromanon, Teduray, Bagobo, Ubo Manobo, Higaonon, Subanen, Maguindanaon, Maranao, Iranon, Karintik B'laan, Lambangian

## THE INDIGENOUS PEOPLES OF THE PHILIPPINES

- Descendants of populations which inhabited the country, at the time of conquest or colonization, or at the time of inroads of non-indigenous religions and cultures, or the establishment of present state boundaries
- Retained some or all of their own social, economic, cultural and political institutions
- Includes those who may have been displaced from their traditional domains or who may have resettled outside their ancestral domain

Source: Republic Act 8371, Section 3h, Chapter 2



## THE INDIGENOUS PEOPLES OF THE PHILIPPINES

The UNDP (2010) reports that:

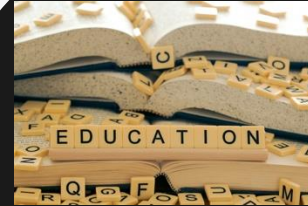
“In the Philippines, IPs have been subject to historical discrimination and marginalization from political processes and economic benefit. They often face exclusion, loss of ancestral lands, displacement, pressures to and destruction of traditional ways of life and practices, and loss of identity and culture.”



# REPUBLIC ACT 8371: THE INDIGENOUS PEOPLES' RIGHTS ACT (IPRA)



Enacted in 1997 to correct historical injustice and to recognize and protect the rights of IPs.



Cornerstone of national policy on IPs including in education.



Effective implementation remains a challenge.

# OUR JOURNEY: A HISTORY OF DISADVANTAGE & NEGLECT

01

02

03

04

05

ACCESS

UNDERACHIEVEMENT

SCHOOL IS A  
VENUE OF  
DISCRIMINATION

SCHOOL IS AN  
EXPERIENCE OF  
NON-BEING

DISCUSSION IS  
LIMITED TO  
SURFACE  
CULTURE

EDUCATION-RELATED ISSUES

# IMPACTS

Difficulty in  
learning the  
needed  
competencies

Loss of respect for  
one's culture and  
heritage

Low self-esteem,  
sense of shame,  
loss of IP identity

Focus on own  
success

Agent of  
community  
disunity

# UNDERACHIEVEMENT IN EDUCATION

Low participation,  
survival and  
completion rates

Underperform in  
disciplines involving  
science and  
mathematics

Performance in  
mathematics courses  
is significantly lower  
than those of non-IP  
students

# WHY INDIGENIZE?

- Indigenous Peoples have complex, dynamic, relevant and valid knowledge systems;
- Forward the respect for Indigenous Peoples' history and sense of community, worldviews and their right to self-determination.
- Indigenous Peoples' knowledge systems provide an alternative view and understanding of the world.



# WHY INDIGENIZE?

- To indigenize is to decolonize!
- Education was both a target and tool of colonialism, destroying and diminishing the validity and legitimacy of indigenous education, while simultaneously replacing it with an “education” complicit with the colonial endeavor (Pihama & Lee Morgan, 2018).

# WHY DECOLONIZE?

- Schooling became a vehicle to expedite the colonial civilization agenda through:
  - The individualization of Indigenous Peoples;
  - Destruction of collective understandings.
- “Kill the Indian in him and save the man” - Capt. Richard H. Pratt who established the Carlisle School in 1879 – a model used in the Philippines during American colonization.
- Epistemic violence (Spivak, 1985).



## DECOLONIZATION as a process of...

- Moving beyond silence;
- Remembrance and reconstruction;
- Reclaiming cultural, economic, social, political and spiritual aspects of indigenous life; and
- Healing and justice.

# GOVERNMENT EFFORT

Department Order 62,  
s. 2011

- Adopting the Indigenous Peoples (IP) Education Policy Framework; one of the Department of Education's strategic priorities under then President Benigno Aquino Jr.
- Long-term goal: remove the barriers for the meaningful participation of IPs "in the different levels and spheres of society and empowers them to exercise their rights and duties as Filipino citizens" (D.O. 62).
- Created the Indigenous Peoples Education Office (IPsEO) of the Department of Education (DepED)

# GOVERNMENT EFFORT

## QUESTIONS OF IPSEO

- What would an Indigenous Curriculum look like?
- What principles should guide an Indigenous Curriculum in the Philippines?
- What experiences are there that we could learn from?
- What is an appropriate framework that should guide Indigenous Peoples' Education in the Philippines?



## THE 2013 IPSEO PROJECT: FORMULATION OF AN IP CURRICULUM FRAMEWORK IN BASIC EDUCATION

The Philippine Response to Indigenous and Muslim Education (PRIME), a program funded by the Australian government, commissioned the project.

- To support the intent of the National IP Education Policy Framework (DepEd Order No. 62, s. 2011).
- To provide the policy support and guidance for the implementation of a culturally rooted curriculum, specific to schools/learning centers and other learning modalities that serve IP learners/communities.

## BEFORE D.O. 62

- A number of initiatives on IP education have been implemented by the Department of Education, civil society groups, IP Organizations (IPOs), and other community-based efforts since the 1970s or earlier. These initiatives vary from formal to non-formal education. Some have succeeded and persisted through the years, but there are also those that failed.
- DepEd recognizes the need “to consolidate these experiences and lessons to formulate a systematic and coherent IP Education Program, which subscribes to a rights-based approach and gives primary importance to the principles of participation, inclusion, and empowerment.” (D.O. 62)

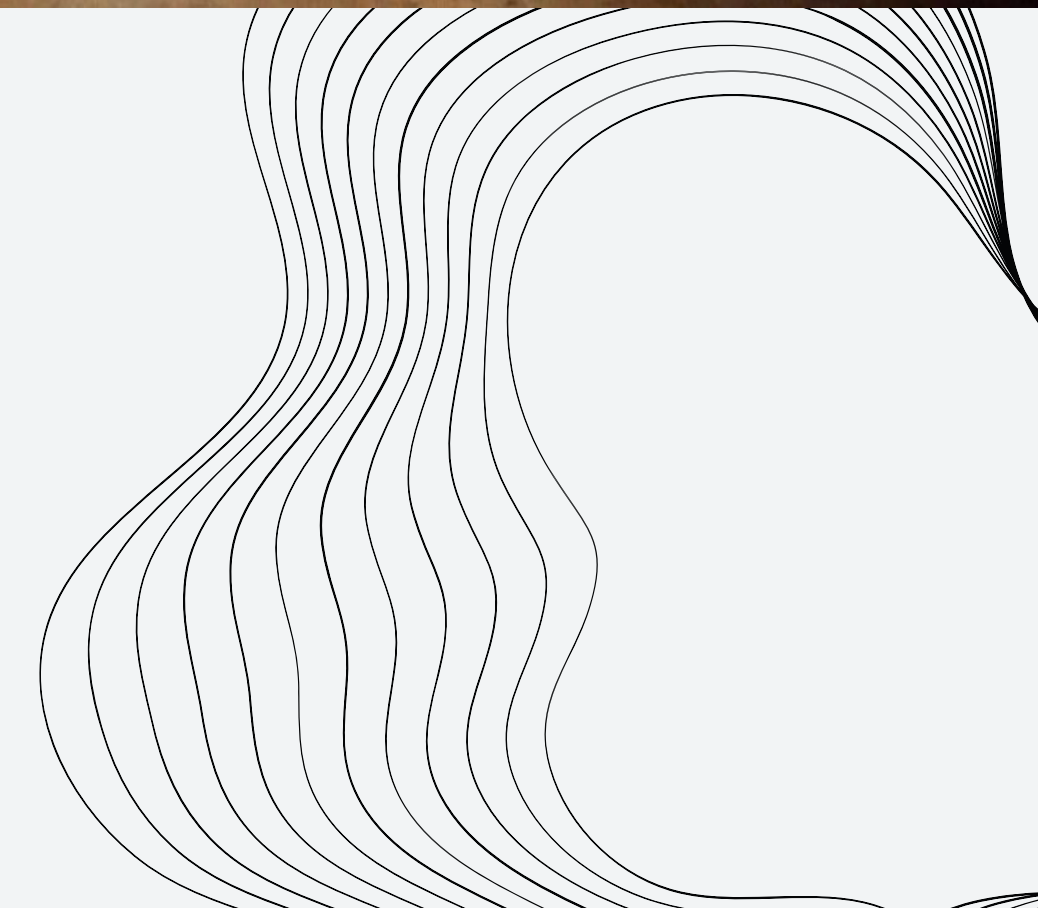
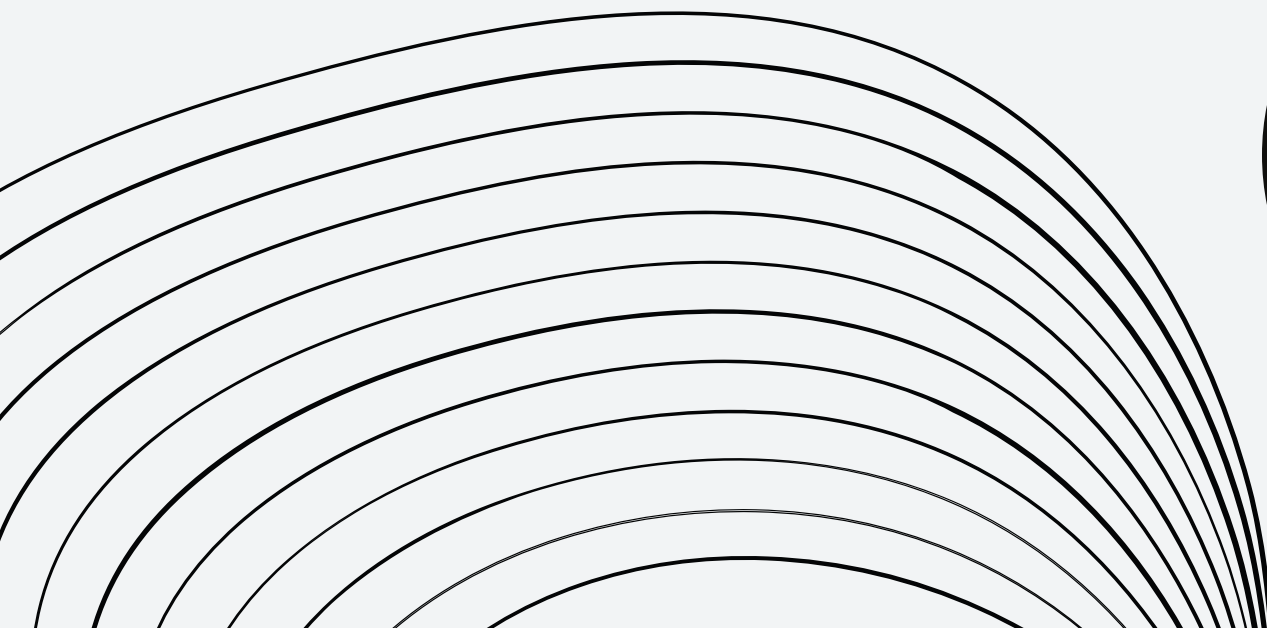


# THE TEAM

Willy Alangui  
& Teret De Villa



Ivy Jaro-Amor, Framie  
Martin, Erika Hernando &  
Diana Avenido





# THE STUDY

Using a consultative and participatory process, the research was done over a period of three (3) months, from November 2012 to January 2013. Sixteen (16) schools participated in the study. These schools were visited...

To gather information on the experiences in implementing IP education;

To validate existing programs based on documents, reports and earlier studies conducted;

To consult with the stakeholders in the areas.

# 16 PARTNER SCHOOLS

1. Banaue Central School (Banaue, Ifugao)
2. Bayninan Community Learning Center (Kiangan, Ifugao)
3. Kalahan Academy (Kalahan, Nueva Vizcaya)
4. Sentrong Paaralan ng mga Agta (Quezon)
5. Tugdaan Mangyan Center for Learning and Development (Naujan, Oriental Mindoro)
6. Ambuan Ogbot (Bongabong, Or. Mindoro)
7. Hatubuan School (Bongabong, Or. Mindoro)
8. PAMANA KA (San Jose, Occ. Mindoro)
9. Tending School (Culion, Palawan)
10. ALS Center (Coron, Palawan)
11. Talaandig School of Living Traditions (Lantapan, Bukidnon)
12. Sta. Cruz Mission School Elementary (Lake Sebu, South Cotabato)
13. Datu Tutukan (Dumingag, Zamboanga Del Sur)
14. Tibi-Tibi Elementary School (Talaingod, Davao Del Norte)
15. SILDAP Community Learning Center (Monkayo, Compostela Valley)
16. Dibabawon Elementary School (Kapalong, Davao Del Norte)



# IP COMMUNITIES

- Ifugao
- Kalahan/Kalanguya
- Agta
- Mangyan
- Tagbuana
- Talaandig
- T'boli
- Subanen
- Ata-Manobo
- Dibabawon



# WHAT WE DID

**01**

KII WITH ADMINISTRATORS

**02**

FGD WITH PARENTS

**03**

FGD WITH ELDERS AND COMMUNITY LEADERS

**04**

FGD WITH TEACHERS

**05**

FGD WITH STUDENTS

**06**

CLASSROOM OBSERVATIONS

# SITE VISITS & CONSULTATIONS



Banaue Central Elementary School  
BANAUE, IFUGAO



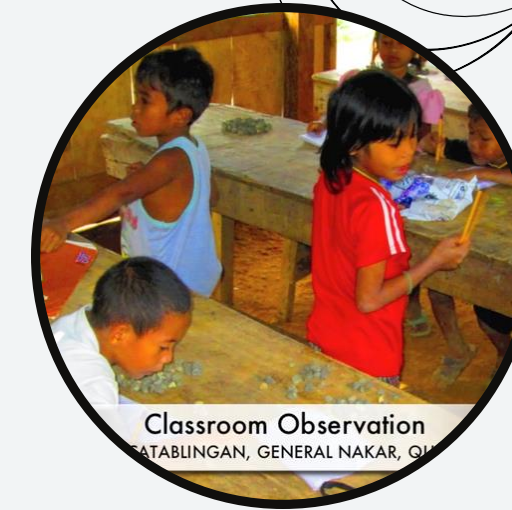
HATUBUAN  
MAYAK, BONGABONG, ORIENTAL MINDORO



PAMANA KA  
MAYAK, SAN JOSE, OCCIDENTAL MINDORO



Classroom Observation  
BALINGASO, SAN JOSE, OCCIDENTAL MINDORO



Classroom Observation  
MAYABUN, GENERAL NAKAR, QUINAPUNAN



Ambuan Ogbot  
MAYAK, BONGABONG, ORIENTAL MINDORO



Focus Group Discussion  
TALAANDIG, LANTAPAN, BUKIDNON



Classroom Observation  
MAYABUN, LEARNING CENTER, CALINOGAN, GENERAL NAKAR, QUINAPUNAN



Classroom Observation  
MAYABUN, ELEMENTARY DEPARTMENT, LAKE SEBU, GENERAL NAKAR, QUINAPUNAN

# DIVERSE CONTEXTS



- These sixteen schools with existing IP education were chosen based on a set of criteria that helped capture the widest possible range of experiences: the schools and programs were either public or private initiatives, catering to pure IP or mixed IP and non-IP students.

- Some of the visited schools underwent different types of transition: (1) from non-formal to formal; (2) started as privately managed then turned over to an IP organization; and (3) from privately managed then later turned over to DepEd.
- Geographical representation was also considered, with some schools coming from the mainland (Luzon), and some from island groups.



# ASPECTS OF THE FRAMEWORK

Guiding principles and philosophy as reflected in their Vision, Mission & Goals

Content, instructional materials, language, etc.

Process of developing the curriculum

Teaching and learning strategies

Evaluation and assessment



# STORIES WE HEARD

## BATAS NG KALIKASAN

1. Igalang ang mga sagradong lugar.
2. Ingatan at pangalagaan ang Kalikasan.
3. Laging magsagawa ng ritwal.
4. Magalangan sa isa-isa.
5. Pahalagahan ang buhay.

## BUKAL NG KANTAYAY

→ Ito ang nagbubukas ng pintuan upang magkaroon ng mahabang tag-araw.

## BUKAL NG BUSLUGAN

→ Ito ang nagbubukas ng pintuan upang bagu-bagu-hin ang kalagayan ng panahon sa araw-araw.

## BUKAL NG NAGSABIAN

→ Ito ang nagbubukas ng pintuan para sumikat ang araw at magkaroon ng ulap.

## BUKAL NG PATIRAMAN

→ Ito ang nagbubukas ng pintuan upang magkaroon ng ibat-ibang lakas ng ulan sa daigdig.

## GLOBO



## BUKAL NG ABAN-ABAN

→ Ito ang nagbubukas ng pintuan upang magkaroon ng ulan sa pamamagitan ng ulap na tinatawag na tunggor.





# GUIDING PRINCIPLES

Education that is appropriate to the culture.

“akma sa kultura”

Education that is rooted in the culture.

“naka-ugat sa kultura”



# PURPOSE OF EDUCATION

- Means of preservation and revitalization of cultural heritage and identity;
- Response to discrimination;
- Build self-esteem and self-concept;
- Way towards self-reliance, and being able to engage the bigger society; and
- Means for community service and defense of ancestral domain

The curriculum should be able to respond to these community aspirations!

# CURRICULUM TYPOLOGY

## TYPOLGY

## HANDLING OF IKS

IP curriculum

Ancestral domain (AD) as foundation/basis of the curriculum; community life informs the curriculum; IP competencies are emphasized more than DepED competencies

Indigenized curriculum

Curriculum is strongly linked to community life; equal focus on DepED and IP competencies.

Integration in the curriculum

IKS is integrated more comprehensively in all subject areas; Emphasis on DepEd competencies; IP competencies are also given importance.

Addition of a separate subject on IKS and culture

IKS is treated as a separate subject; focus is on selected IP competencies (mainly indigenous music and dance, beliefs and practices)

Insertion of cultural elements in specific subjects

Indigenous Knowledge Systems (IKS) are only cited or minimally discussed in relation to DepED topics; cultural elements focus mainly on indigenous music and dance.

# TOPICS COVERED

**01**

INDIGENOUS KNOWLEDGE SYSTEMS, IN VARYING DEGREES AND DEPTH

**02**

LANGUAGE AND OWN SCRIPT

**03**

HISTORY

**04**

ISSUES FACING THE IP COMMUNITY

**05**

ISSUES RELATED TO THE ANCESTRAL DOMAIN

**06**

SUBJECT AREAS



# KEY QUESTION

- The DepED policy statement seeks to “recognize, protect, and promote the rights and welfare of Indigenous Cultural Communities/Indigenous Peoples, as well as equip them with the knowledge and skills needed to face various social realities and challenges” (D.O. 62, s. 2011).
- What type of an IPEd school has greater success in achieving this? What are the factors or elements that will ensure this?

# KEY FINDINGS

Important factors or elements in IP Education:

- A curriculum that is based on the ancestral domain (taken here to mean not only the physical environment but also includes spiritual, cultural, and traditional practices).
- In other words, the curriculum should be able to address and incorporate the special needs, histories, identities, languages, knowledge, and other aspects of their culture, as well as their social economic and cultural priorities and aspirations (D.O. 62).

# KEY FINDINGS

Important factors or elements in IP Education:

- Teachers have deep consciousness and understanding of the people's and community's culture and aspirations.
- Active involvement of knowledge holders/cultural bearers/elders in the learning process and in curriculum development.
- Teachers and knowledge holders are involved in the production and revision of instructional materials.

# KEY FINDINGS

Important factors or elements in IP Education:


- Strong Indigenous Peoples Organization (IPO) participation in the management of the school;
- Strong collaboration with like-minded organizations such as Non-Government Organizations and church organizations.
- There is continuing research by teachers and students, with knowledge holders as acknowledged experts and resource persons.





# KEY FINDINGS

We found that the more successful and sustainable schools have the following impacts on their students. They have:

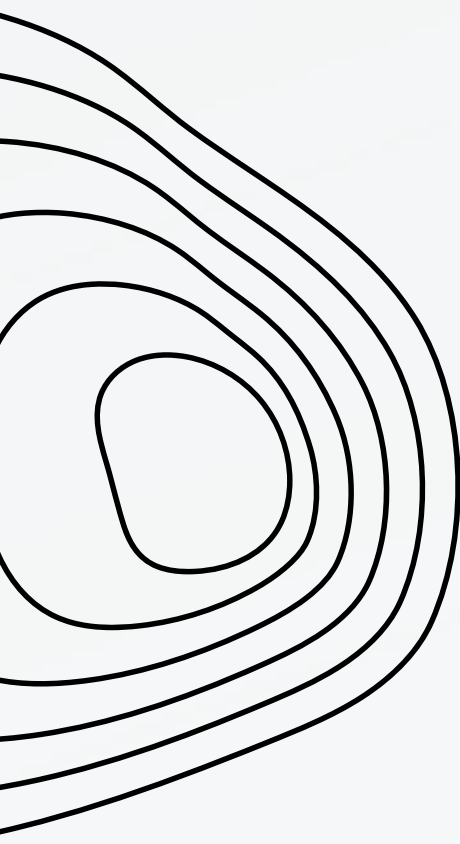
- Deeper understanding of their indigenous culture and identity.
  - Bigger sense of purpose on why they need education: articulation of desire to eventually be able to help their communities and help preserve their cultural heritage;
  - Deeper sense of and belonging to a community.
- 




# VALIDATION

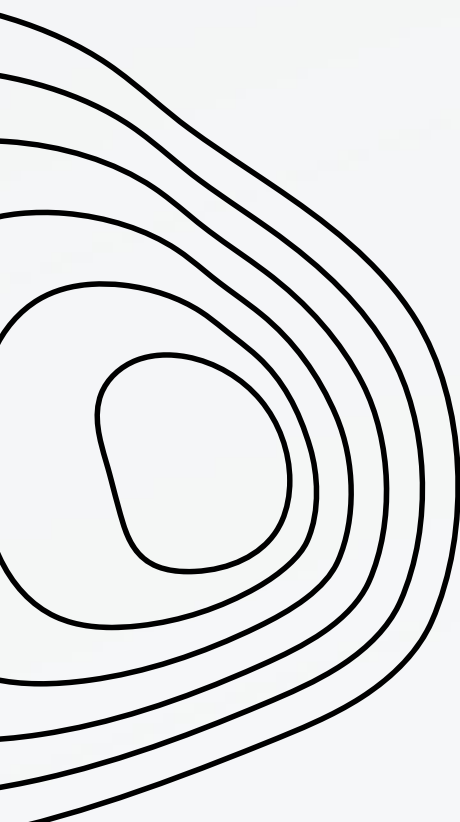
Two regional validation workshops were held, one for Luzon and the other for Visayas and Mindanao, and a national workshop was held in May 2013, to share key findings and get feedback from schools and communities we visited.


The agreed final IP curriculum framework had the following features:







# FEATURES OF AN IP CURRICULUM FRAMEWORK

- 
- Is rooted in the ancestral domain and indigenous institutions;
  - Embodies the sacredness of transmitting Indigenous Knowledge Systems;
  - Revitalizes, regenerates, strengthens, and enriches IKS, indigenous learning systems, and indigenous knowledge;
  - Affirms and strengthens IP identity;




# FEATURES OF AN IP CURRICULUM FRAMEWORK

- Focuses on cultural competencies, and includes other forms of knowledge, concepts and skills attuned with the needed life-long learning values and life skills for the development and protection of ancestral domains, their culture and the advancement of IP rights and welfare;
  - Allow the whole community to discern new concepts that will contribute to the community's cultural integrity while building new relations with the broader society;
- 



# FEATURES OF AN IP CURRICULUM FRAMEWORK

- Uses instructional materials and resources that are culture-based and culture-sensitive; and
  - Utilizes the whole ancestral domain as a learning space.
- 

# FIRST DECADE (2011-2021)

Massive orientation of stakeholders (Heads of schools, superintendents, supervisors, principals, head teachers, teachers, communities and elders, parents, etc.)

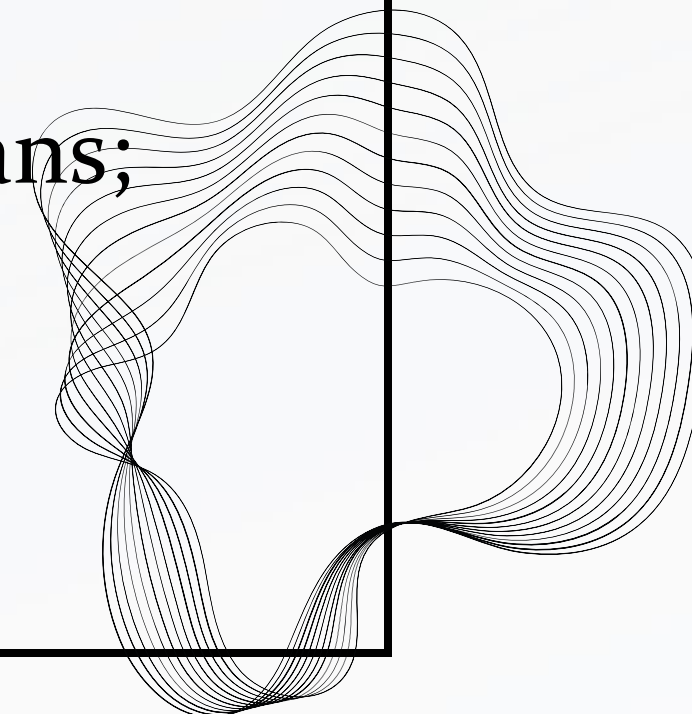
- Orientation involved situation of Indigenous Peoples in the Philippines
- Why the need for an IP Education Program
- Each Division created their own curriculum framework based on the National IPED Curriculum Framework
- Trainings and Workshops on contextualization (indigenization and localization)
- Implemented through the IPSEO (Indigenous Peoples Education Office)
- A joint project between the Department of Science and Technology and the Department of Education.



# INDIGENIZATION IN SCIENCE and MATHEMATICS INSTRUCTION

Joint project of the Department of Science and Technology (DOST)  
and the DEPED, in Support of the IP Education Program

## Aims:

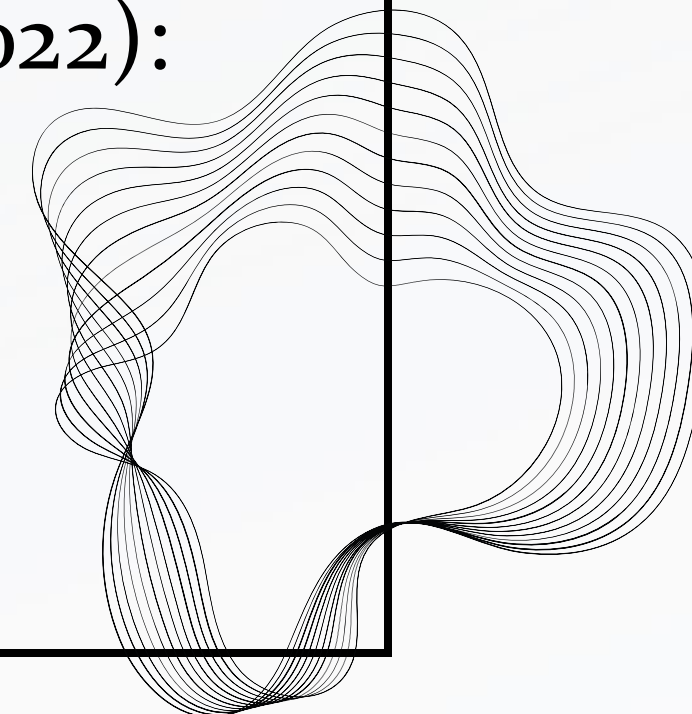
- Provide experience to teachers in developing culturally relevant lesson plans in science and mathematics;
  - Strengthen their confidence to come up with such lesson plans;  
and
  - Develop exemplars of culturally relevant lesson plans
- 



# INDIGENIZATION IN SCIENCE and MATHEMATICS INSTRUCTION

Pilot: Focus on Grades 2, 3 & 4

Two Phases:

- Phase 1: Aeta communities (2016-2018): focus on Science
  - Phase 2: Bago, Ibaloi and Kankana-ey communities (2020-2022): focus on Mathematics
- 

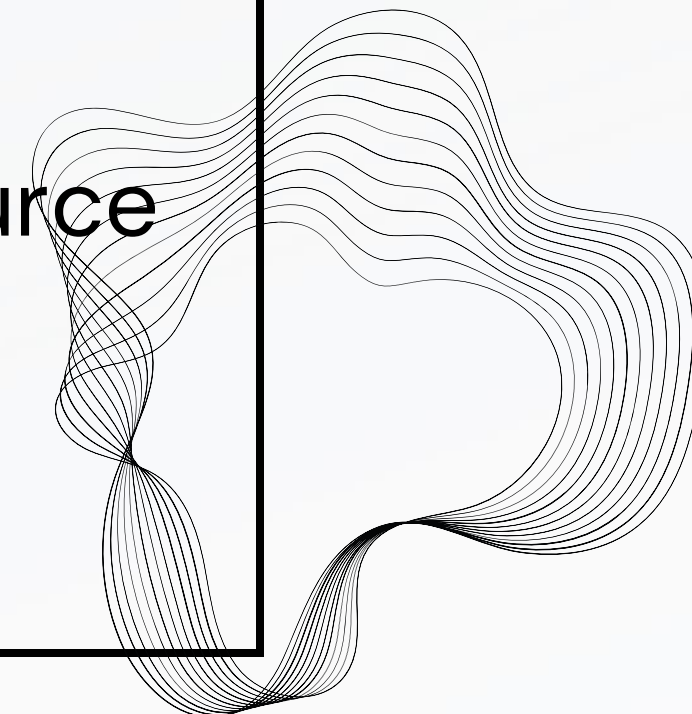


# IMPLEMENTATION

- DOST National Office
- IPsEO
- DEPED Division Offices
- Heads and teachers from participating schools
- Orientation with community, elders, parents
- Training and workshops with teachers with participation from elders



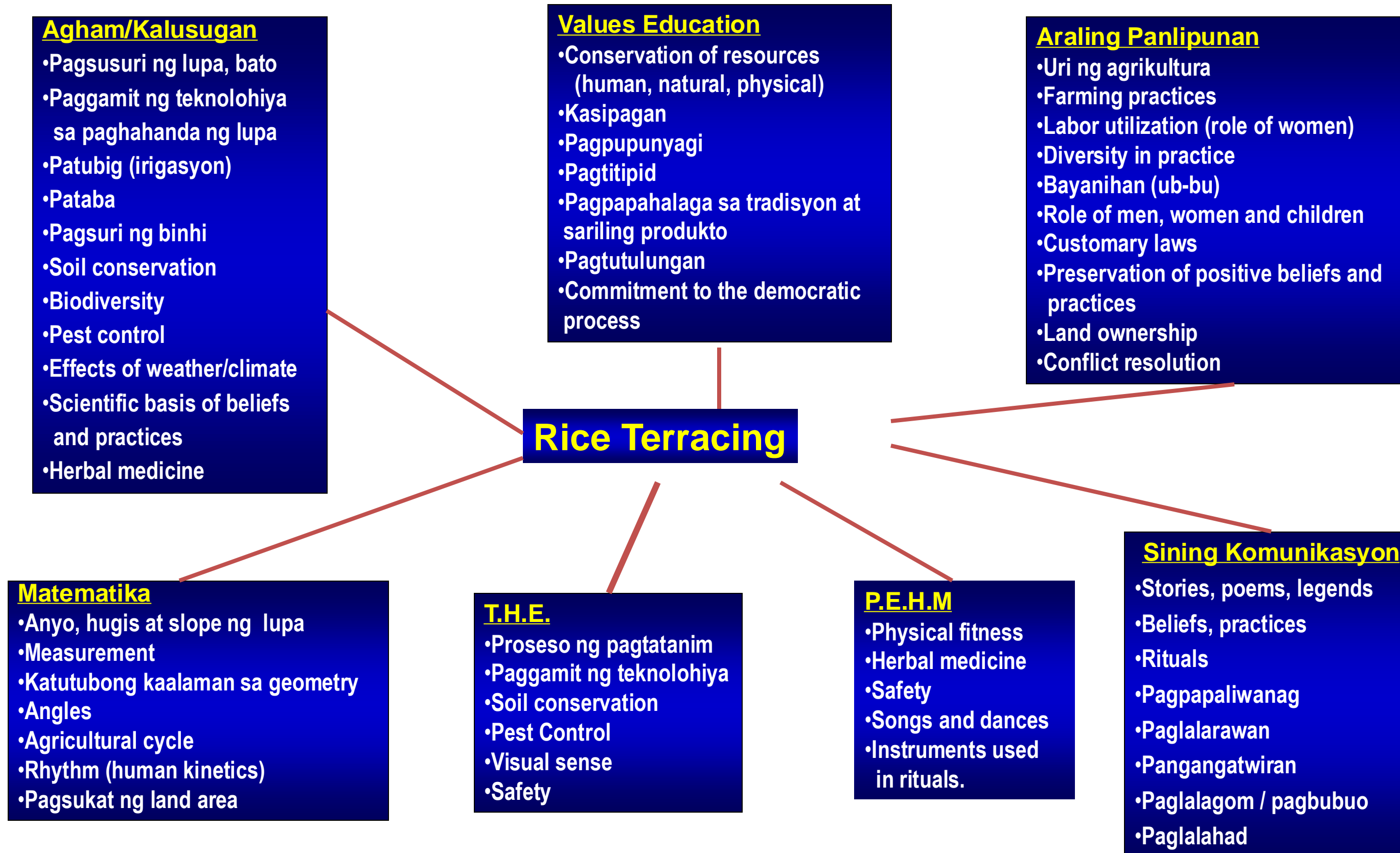
## PROCESS IN THE DEVELOPMENT OF INDIGENIZED LESSON PLANS

- Identify specific cultural practice to focus on
  - Teachers write lesson plans with inputs from elders and community
  - Resource persons make comments and suggestions
  - Validation of lessons with elders and community; resource persons in attendance
  - Process of testing: lesson plan is given to a different teacher to present in actual class, with elders and resource persons (and team in attendance)
  - Finalize lesson plans
- 

# CURRICULUM WEB

- Expressed fears by the teachers: Familiarity with the culture; and how to contextualize or indigenize.
- Starting point: Curriculum Web
- Enrichment of the Education Programs in the Cordillera Administrative Region through the Incorporation of Usable Indigenous Knowledge in the Formal and Non-Formal Curricula (2001 Project)
- For example: Viewing the rice terracing practice:
  - as an integrated system (muyong, irrigation and water management, stonewalling, rice terraces; process of sowing to harvesting); and
  - as a knowledge system (IKSP; and arts and the humanities, science and mathematics, social sciences)

# Sample Web for the Integration of Indigenous Knowledge on Rice Terracing in the Curriculum



# Science

- ### Science
1. Materials
  2. Predicting
  3. Food Chain
  4. Energy
  5. Chemical/Physical Change
  6. Seasons

# Communication Arts

1. Sentences
2. Sequencing events
3. Cause-effect
4. Predicting Outcomes
5. Stories
6. Adjectives in series
7. Verbs and adverbs
8. Following directions
9. Comparison and Contrast

# EPP

1. Paghahayupan
2. Pagluluto
3. Pag-iimbak
4. Pagdudulot ng pagkain
5. Paghahalaman
7. Imbentaryo ng paninila
8. Wastong kagamitan
9. Kasuotan
10. Pagdadalaga at pagbibinata

# Math

1. Volume
2. Ratio and proportion
3. Measurements
4. Division
5. Set
6. Estimation
7. Simple probability
8. Area
9. Circumference
10. Problem solving
11. Time
12. Fractions



# EsP

1. Sharing
2. Cooperation
3. Respect for elders, culture
4. Obedience
5. Inayan
6. KAWWAN
7. Sense of responsibility

# MAPEH

1. Songs and dances
2. Instruments
3. Rhythm
4. Designs
5. Health
6. Texture

# AP

1. Kaugalian
2. Tradisyunal na pagpapahalaga
3. Kultura
4. Mamamayan
5. Tungkulin
6. Pagdiriwang
7. Kasuotan
8. Kagamitan

# Aeta Communities (2017-2018)

## Indigenization of Science Education



# Aeta Communities (2017-2018)

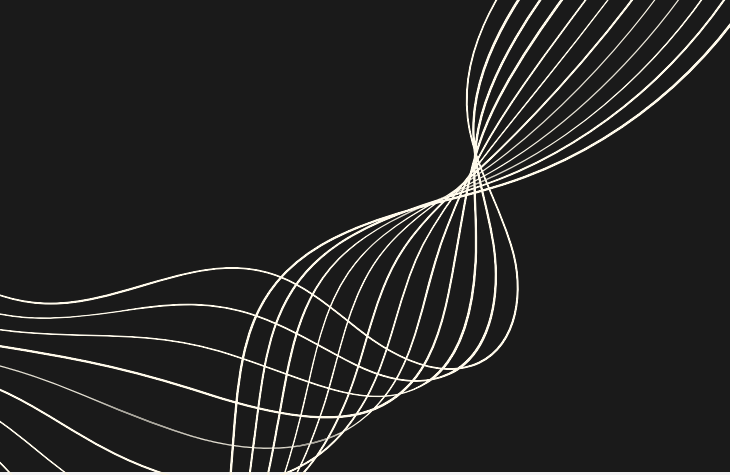






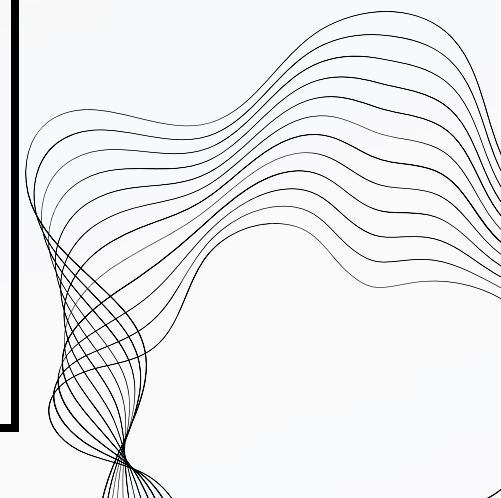


Indong Tacia shows students the Aeta way of filtering dirt from the community's only source of water using bamboos and leaves of particular plants. She also points out some medicinal plants to students.



## Phase 2: Bago & Kankana-ey Communities

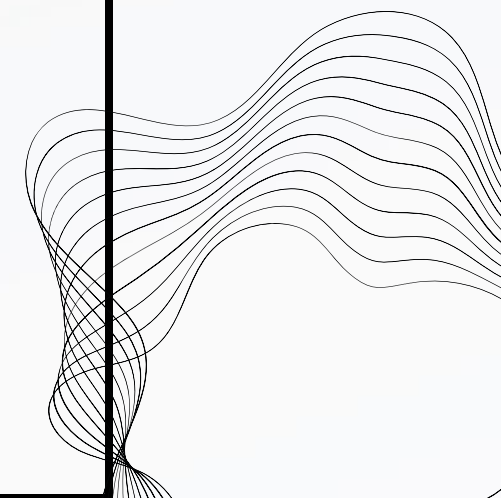
### Focus on Mathematics

- 6 Elementary Schools
  - 2 Provinces/Divisions (La Union and Ilocos Sur)
  - Trainings and workshops started in February & April 2021
  - Development of lessons: May – September 2021
  - Validation of lessons and revisions: October 2021 – January 2022
  - Testing: March 2022
  - Finalization: April – July 2022
- 



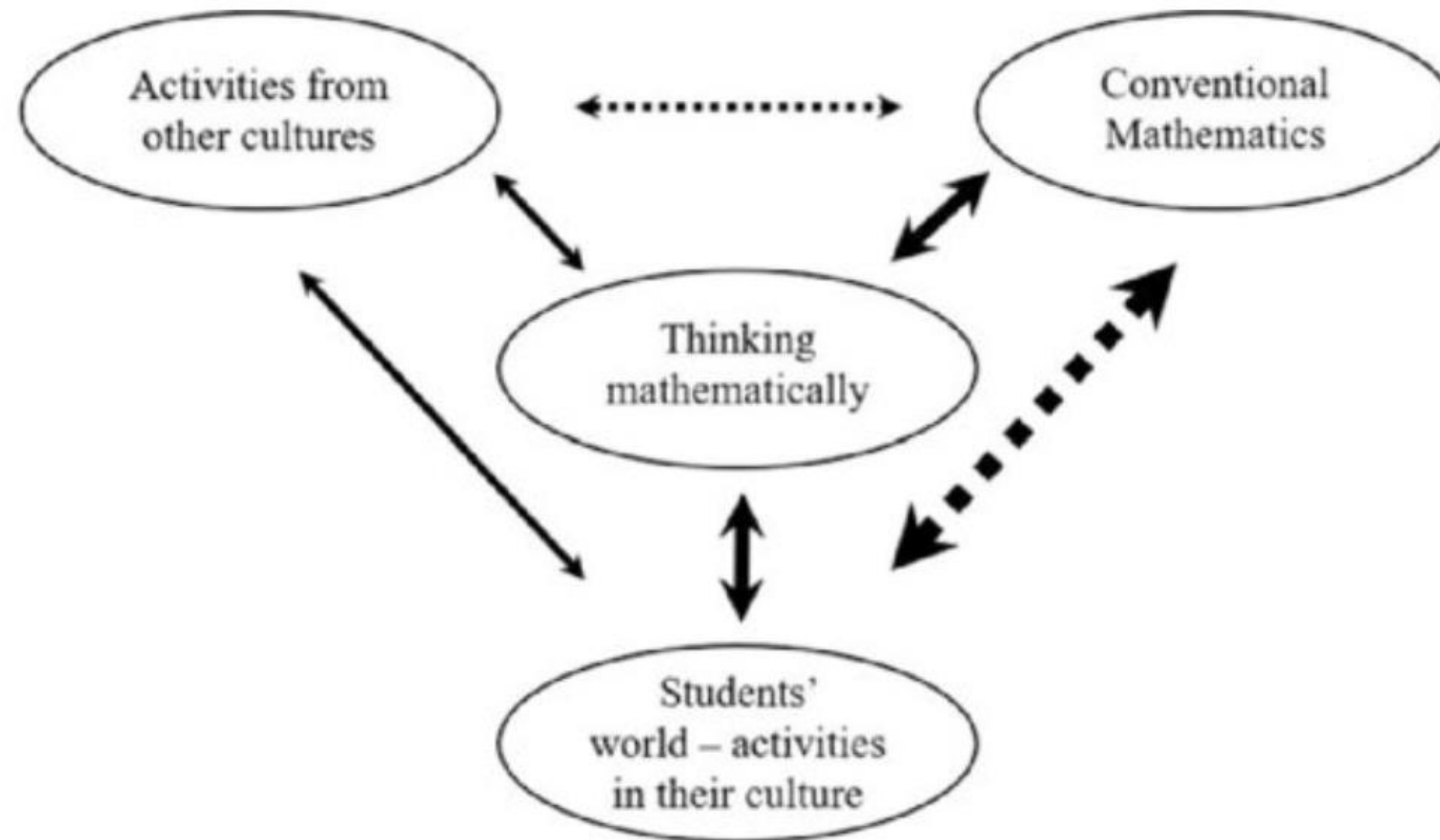
# Phase 2: Bago & Kankana-ey Communities

## Focus on Mathematics

- Some Math topics covered:
    - Basic operations
    - Fractions
    - Probability
    - Step counting
    - Geometry: Areas and Perimeters
    - Geometry: Shapes
  - Some cultural practices covered
    - Weaving
    - Farming
    - Sharing harvest
    - Making Scarecrows
    - Traditional practice of catching fish in the river
    - Practice of collective work/shared work
    - Wedding
    - Building houses
- 

# ETHNOMATHEMATICAL CURRICULUM MODEL

(ADAM, 2006; MODIFIED MODEL BY ALANGUI, 2018)



# Developing Math Lessons: Some Examples

Harvesting Cassava & Catching Fish (Pag-aani ng Kamoteng Kahoy at Paghuli ng Isda)		
Students' world – activities in their culture	Description of the activity; practices, beliefs, knowledge and skills needed in the conduct of the activity	Mga pamamaraan ng pag-ani ng kamoteng kahoy at paghuli ng isda; mga gamit; mga paniniwala; pagkakaiba-iba ng pamamaraan, gamit at paniniwala; pagkakapare-pareho. (Different ways to harvest cassava & to catch fish; beliefs & practices; differences in ways, materials, beliefs; similarities)
Thinking mathematically	Qualitative, relational and spatial concepts in the activity	Habang dumadami ang bitak ng lupa, mas marami ang mahuhukay na kamote (More cracks in the soil means more cassava); Habang dumadami ang tubig sa ilog, kumukonti ang huling isda at kapag kaunti lang ang tubig sa ilog, mas maraming nahuhuli (Heavy volume of water in the river, less fish; Less water, more fish in the river)
Conventional Math	Variation (direct and inverse)	Pagpapahalaga: Bakit kailangang matutunan ang variation? Saan saan eto nakikita o nararanasan? (Why is it important to learn variation? Where else is this used in community life?)  Pagsasanay (Evaluation)

# Developing Math Lessons: Some Examples

STONE WALLING (Menkabiti/mentupeng)		
Students' world – activities in their culture	Description of the activity; practices, beliefs, knowledge and skills needed in the conduct of the activity	Activities related to the construction of stone walls; indigenous ways of measuring and estimating.
Thinking mathematically	Qualitative, relational and spatial concepts in the activity	<p>*Height of stone wall: How do we decide on the height? How do we measure?</p> <p>*Inclination: How do we decide on the angle of inclination? How do we measure inclination?</p> <p>*Area of paddy: How do we measure area of the rice paddy? Why is area of the rice paddy important? What is the relationship of height of stone wall and area?</p>
Conventional Math	Lengths and measurements; slope, area	<p>Pagpapahalaga: Why is it important to learn about measurements? Where else do we use length, slope, area?</p> <p>Pagsasanay (Evaluation)</p>



Building a traditional window



Teaching students how to fish in the river

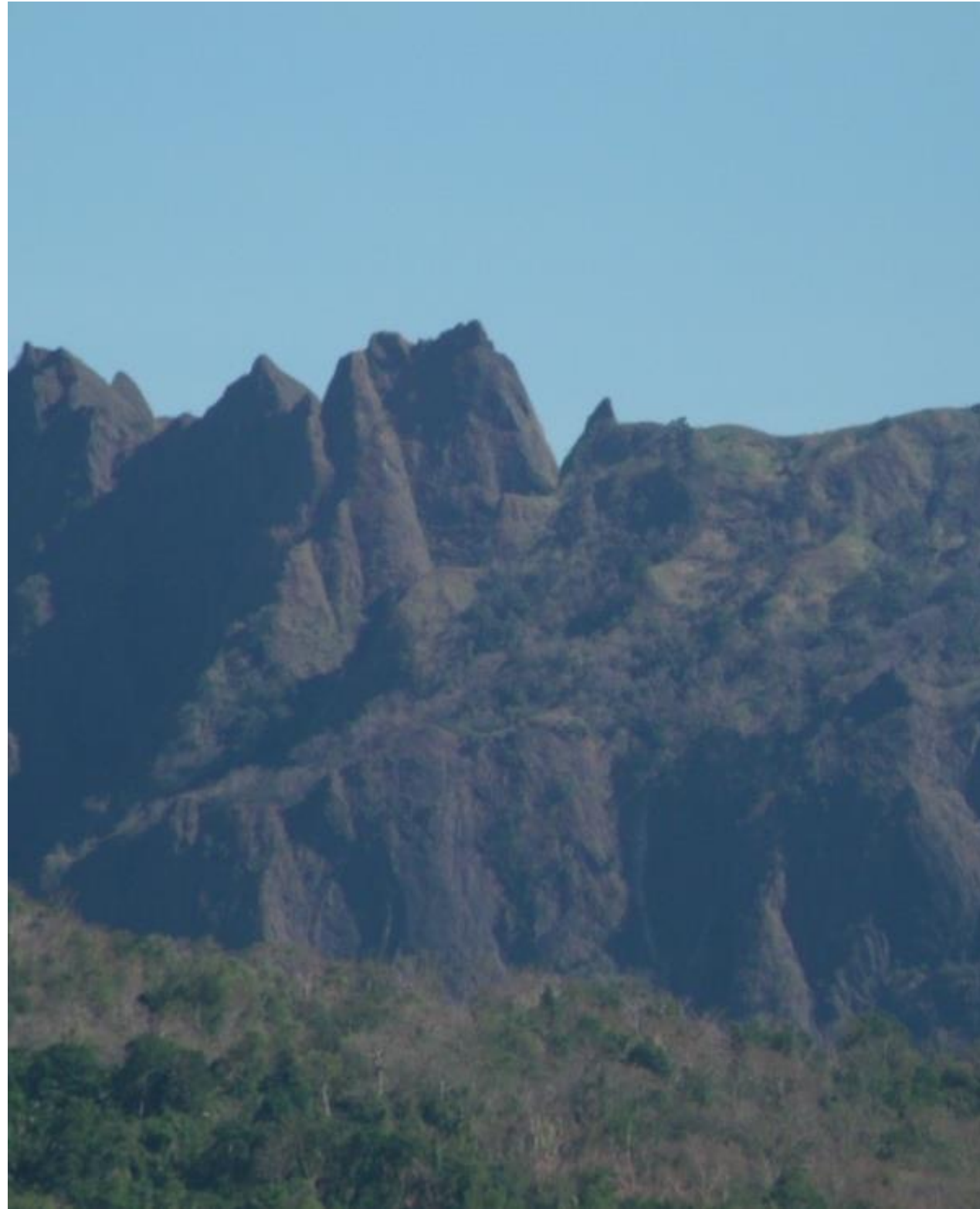




Indigenous dance and music  
using gongs and drums (*solibao*)



# The PAMANA KA Experience



- Paaralang Mangyan na Angkop sa Kulturang Aalagaan (PAMANA KA) is a school for the Mangyan in San Jose, Occidental Mindoro
- Supports students from all the seven (7) Mangyan groups Occidental Mindoro – Hanunuo, Gubatnon, Rataganon, Buhid, Taobuid, Alangan, Iraya.

# Brief History



- Established in 1999 by the Franciscan Missionaries of Mary (FMM); since then, it has made education accessible to Mangyan children.
- Response to a request by Pantribong Samahan ng Kanlurang Mindoro (*PASAKAMI*), a Mangyan organisation.

# Impact

PAMANA KA “has moved the Mangyan from the margins to the center. It has contributed to the rewriting of the Mangyan story – from being discriminated and set aside, now recognized, acclaimed, and given honor.”



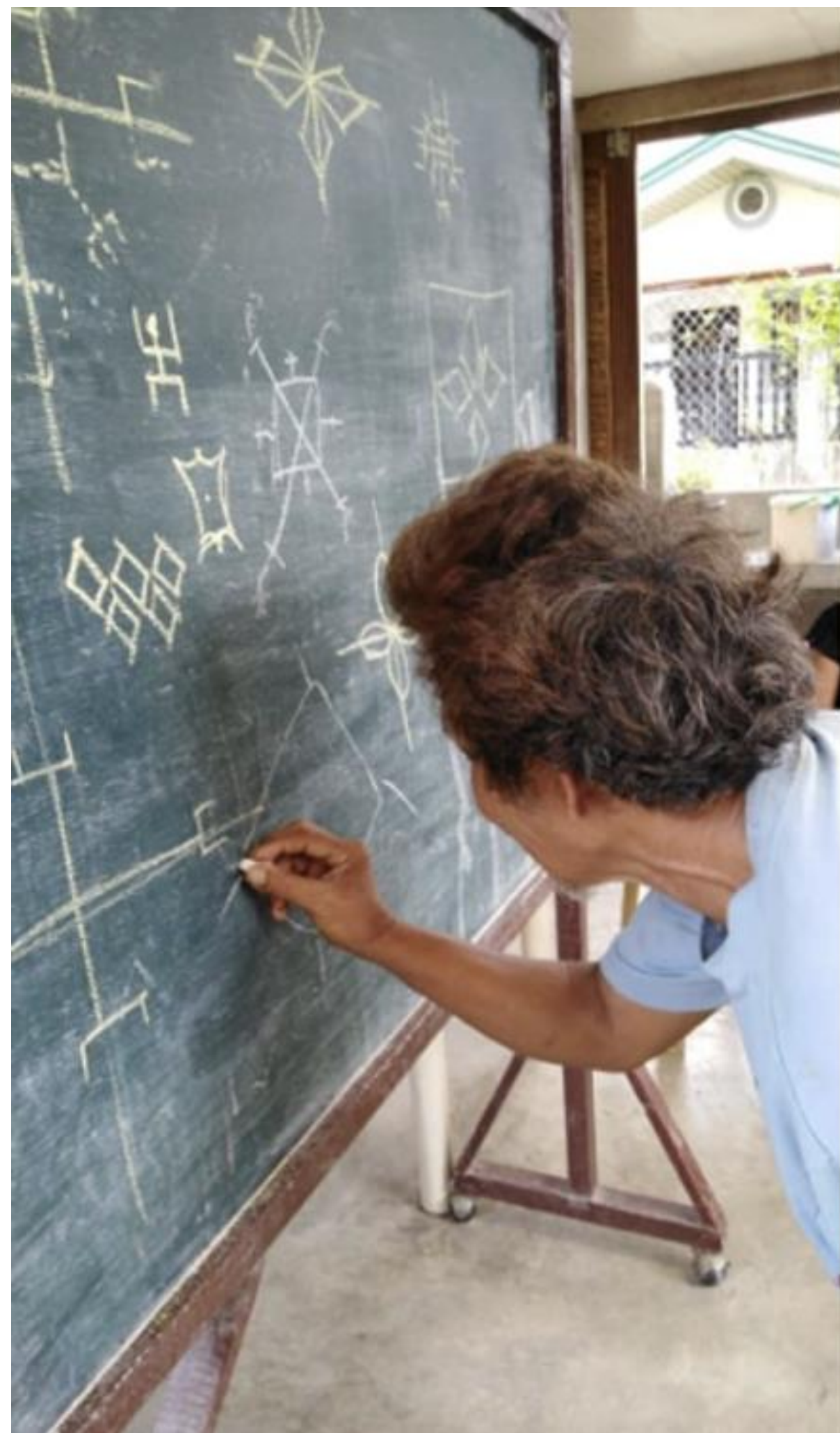


PAMANA KA  
Danlog, San Jose, Occidental Mindoro



- PAMANA KA TRAINING CENTER
- San Jose, Occidental Mindoro









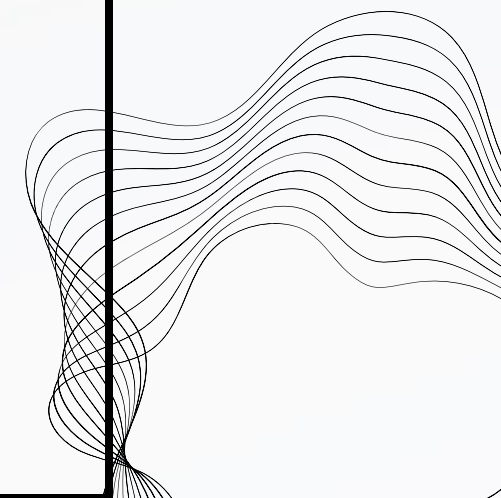
# Initial Insights on the Role of Elders and Knowledge Holders

## Impact on Teachers

Collaboration with the elders builds confidence on the teachers;  
For IP teachers, they are also (re)learning their own culture;  
Helps them break away from traditional ways of teaching;  
Develops understanding about IP issues.

## Impact on Students

Participates more in activities;  
Generally, more comfortable with the elders and are not afraid to ask questions;  
Exposure to new ways of learning - "more fun";  
More confident in showing what they already know.  
Understanding of their issues as members of indigenous groups



# Initial Insights on the Role of Elders and Knowledge Holders

## Impact on Elders and Knowledge Holders

Changing view about education.

Gives them a new sense of purpose:

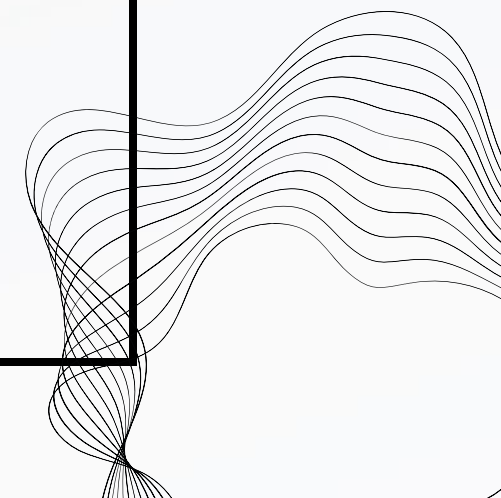
*Kuna mi nu awan ti interasado – I thought they are not interested*

*Adda pay gayam serbik – I feel like I still have value*

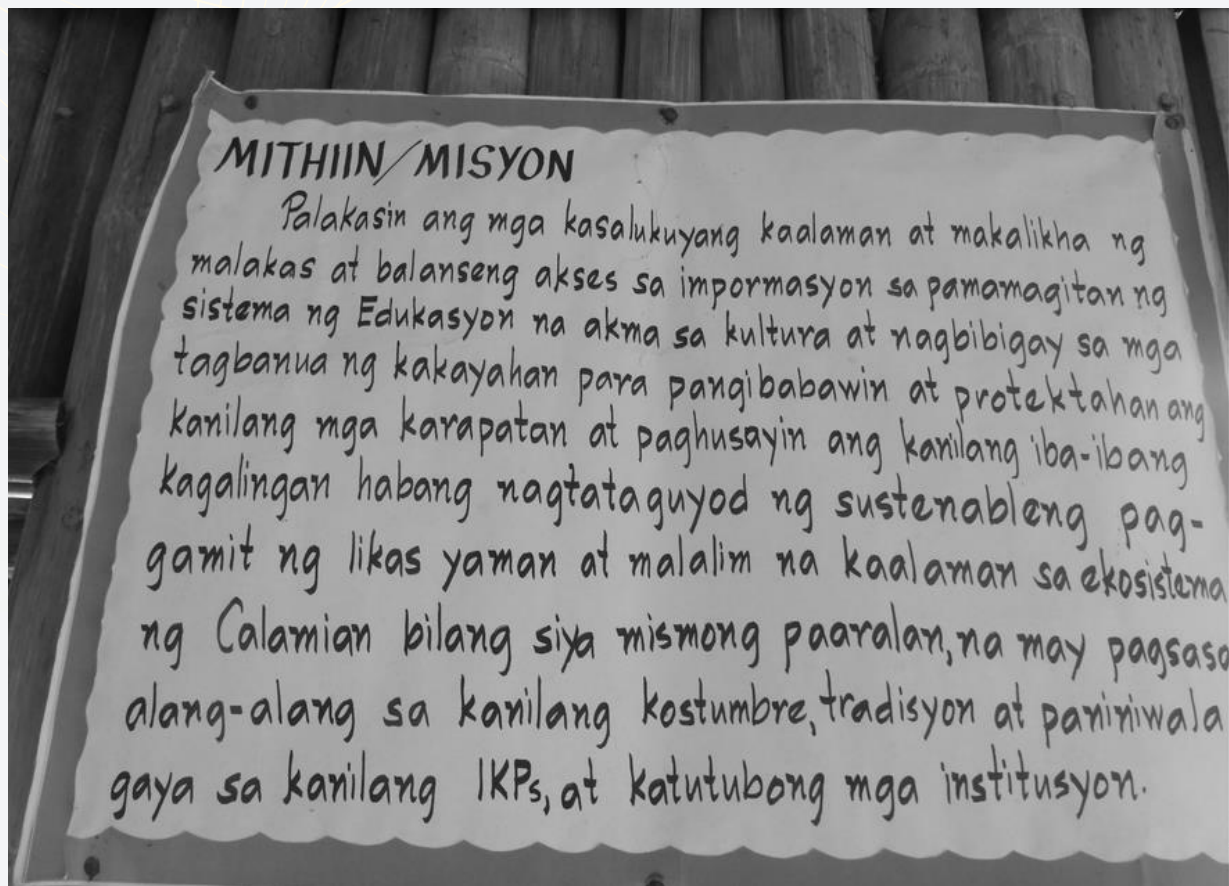
*Adda pay balor ti kaamuan - I feel my knowledge is still important*



## Some Insights on the IPed Program in the Philippines

- Policy support to ensure the implementation of the Indigenous Peoples Education Program in the Philippines (DO 62, IPsEO);
  - IP Curriculum Framework that was formulated through a consultative process;
  - Community-involvement in the implementation of the program;
  - Continuous effort at transforming perceptions and understanding about the importance of indigenous education;
  - Continuous capacity and capability training for teachers and facilitators;
  - Role of elders and knowledge holders, provision of support for those involved in IP education
- 
- Culturally relevant mathematics education can only succeed within the context of a broader and clear IP education program
- 

# ASPIRATIONS

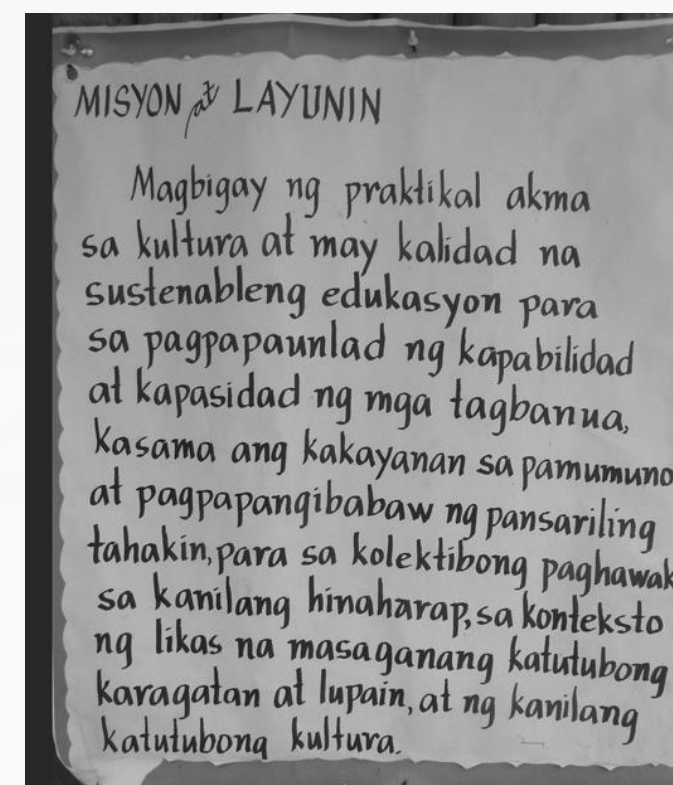


## ASPIRATIONS/MISSION

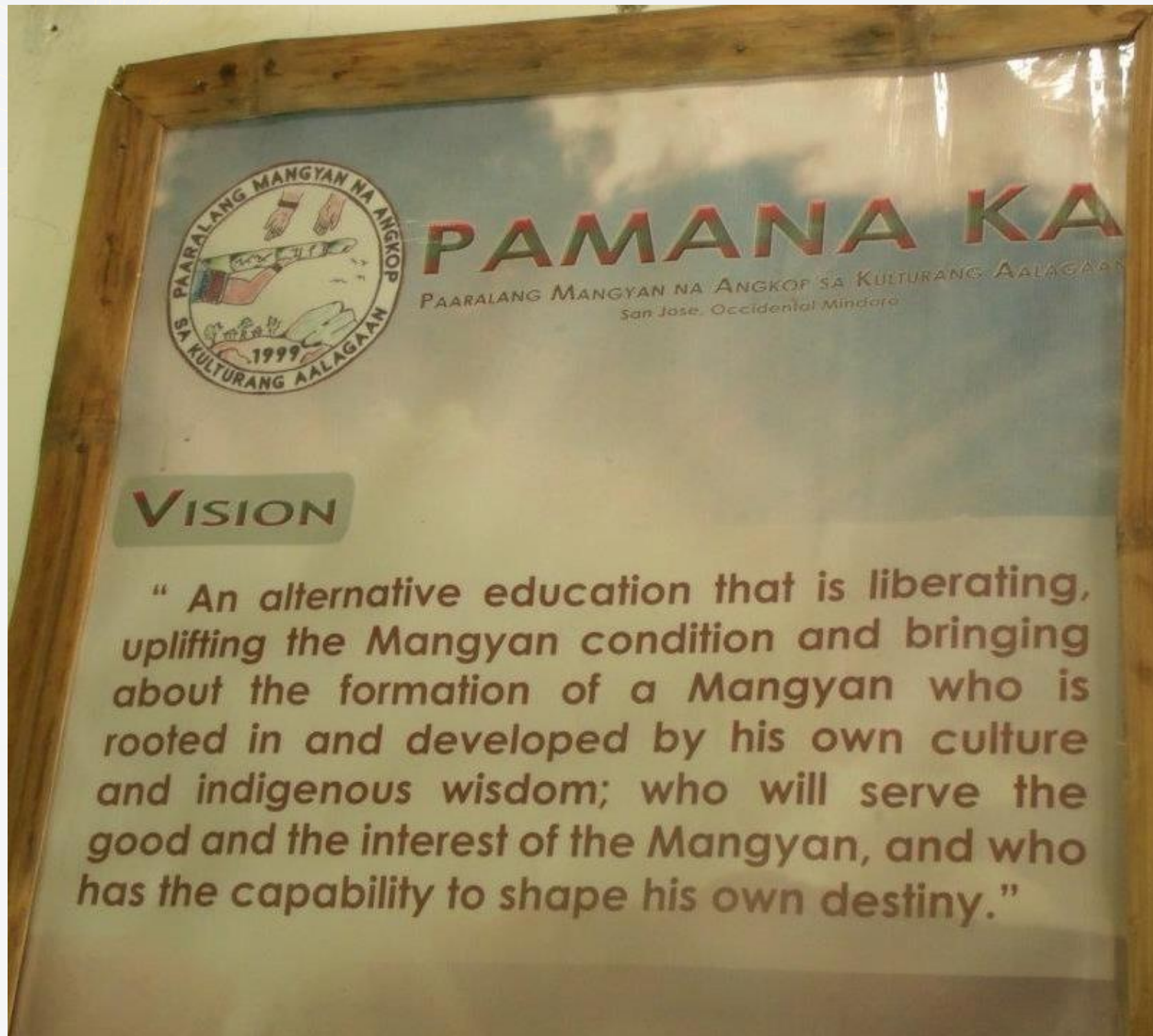
Strengthen the current knowledge and create strong and balanced access of information through an **education that is appropriate to our culture, one that provides the Tagbanua the capacity to secure and protect their rights, and enhance their various knowledge while engaging in a sustainable use of the natural environment,** with deep understanding of the Calamian ecosystem, it being the site of knowledge, and in consideration of our customs, traditions and beliefs, like our Indigenous Knowledge and Practices, and indigenous institutions.

## MISSION AND AIMS

Provide a sustainable and quality education that is practical and appropriate to the culture for the development of the capabilities and capacities of the Tagbanua. This includes **the ability to become leaders who can transcend personal interests and who believe in collective action in securing their future,** within the framework of vibrant indigenous seas and lands, and indigenous culture.



# ASPIRATIONS



## VISION

An alternative education that is liberating, uplifting the Mangyan condition and bringing about the formation of a Mangyan who is rooted in and developed by his own culture and indigenous wisdom; who will serve the good and the interest of the Mangyan, and who has the capability to shape his own destiny.

## Into the 2<sup>nd</sup> Decade (2022-2032)

What are the concrete impacts on IP aspirations? What are and aren't we doing correctly in the context of Philippine realities?



## Into the 2<sup>nd</sup> Decade (2022-2032)

How will a math classroom in the context of IP education help realize these aspirations?



### ● IN THE KNOW

## Chad Errol Booc

Instructor, Lumad Bakwit School

#### EDUCATION

**BS Computer Science**, cum laude (2016)  
University of the Philippines Diliman

His thesis, the **PsychUP mobile application** for the UP Manila psychosocial wellness program was adopted by the university and **recognized internationally in Greece and Japan**

#### VOLUNTEER WORK

**Volunteer Math and Science Teacher**  
Alternative Learning Center for Agricultural and Livelihood Development (ALCADEV), a community-led school for Lumads in the Caraga region facing threats from the government forces

He has been publicly posting on his social media about the **attacks on Lumad communities**, which has led him to be **red-tagged by the National Task Force to End Local Communist Armed Conflict (NTF-ELCAC)**



Booc is part of the 26th petition of indigenous people against the anti-terror law in the Supreme Court

**MATAGO-TAGO TAKO AM-IN!  
AGYAMANAK!  
MARAMING SALAMAT!  
THANK YOU!**

