

Can
Local and Indigenous Knowledge
strengthen adaptation and mitigation actions
in ACP countries?

WEBINAR

An initiative the OACPS and Intra-ACP GCCA+ Programme

29 APRIL 2020 • 1 pm – 2.30 pm (CEST)



Welcome

to everyone from all over
the world



Intra-ACP GCCA+ Programme

The Intra-ACP Global Climate Change Alliance Plus (GCCA+) Programme is an initiative of the **Organisation of African, Caribbean and Pacific States (OACPS)** funded under the 11th European Development Fund (EDF) to support ACP countries address climate change challenges through enhanced dialogue and cooperation.

OACPS

Since 5th April 2020, the African, Caribbean and Pacific Group of States (ACP) officially became the **Organisation of African, Caribbean and Pacific States (OACPS)**

79

MEMBER STATES

47

LEAST DEVELOPED COUNTRIES (LDCs)

37

SMALL ISLAND DEVELOPING STATES (SIDS)

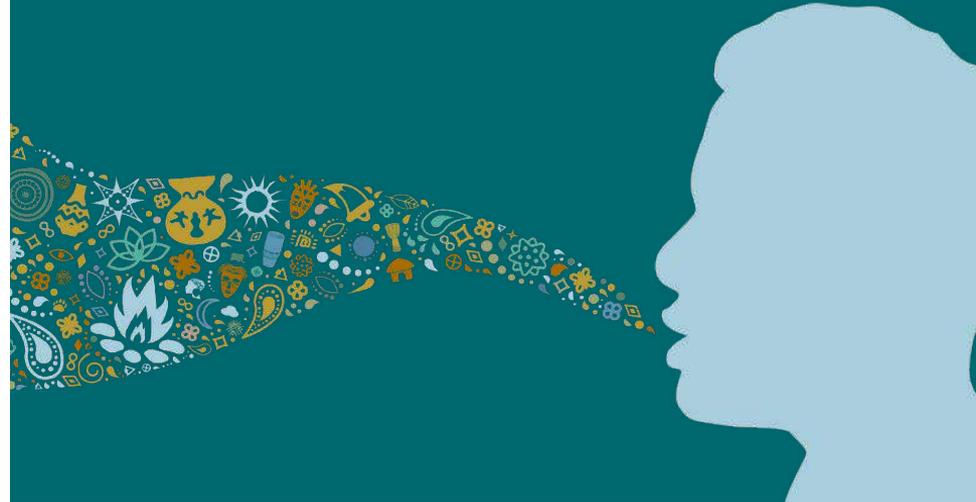
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LANDLOCKED LDCs



- **Promote dialogue and raise awareness** about role of LIK in climate change adaptation and mitigation in ACP countries/regions
- **Identify and share good examples, success stories and research** findings from ACP countries/regions
- **Establish how to encourage participation and representation** of LIK holders and experts from ACP countries/regions to international platforms and debates... (UNFCCC)

Objectives of the Webinar



Programme of the Webinar • 1pm – 2.30pm (CEST)

| | SESSION | SPEAKER | TIME |
|-----------|--|---|-------|
| 01 | OPENING SESSION Welcome remarks | Representative from the OACPS Secretariat . | 5 min |
| 02 | Presentation of the LOCAL & INDIGENOUS KNOWLEDGE POLICY PAPER | Dr. Pendo Maro Team Leader of the Intra-ACP GCCA+ Programme. | 5 min |
| 03 | FAO's WORK ON INDIGENOUS PEOPLE'S FOOD SYSTEMS | Mr. Yon Fernández-de-Larrinoa Head of Unit, Indigenous Peoples Unit (PSPI), Food and Agricultural Organisation (FAO). | 5 min |
| 04 | CURRENT WORK OF THE LCIPP | Ms Hindou Oumarou Ibrahim Member of the Facilitative Working Group of the International Indigenous Peoples Forum On Climate Change. | 5 min |
| 05 | UNESCO WORK ON LIK | Dr. Nigel Crawhall Chief of Section, Small Islands and Indigenous Knowledge, UNESCO. | 5 min |



Programme of the Webinar • 1pm – 2.30pm (CEST)

| | SESSION | SPEAKER | TIME |
|----|------------------------------------|---|--------|
| 06 | BEST PRACTICES From ACP Regions | <ul style="list-style-type: none"> • Mr. Mclay Kanyangarara Climate Change Advisor, Common Market for Eastern and Southern Africa (COMESA). • Dr Maguette Kaire, Forestry Expert, CILSS Focal Point of GCCA+ regional project. • Mr. Carlos Fuller International and Regional Liaison Officer – Caribbean Community Climate Change Centre (CCCCC). • Prof. Elisabeth Holland, Norway-Pacific Chair in Oceans and Climate Change at the University of the South Pacific (USP) and the University of Bergen. • Ms. Siosinamele Lui, Climate Traditional Knowledge Officer, Secretariat of the Pacific Regional Environment Programme (SPREP). | 15 min |



Programme of the Webinar • 1pm – 2.30pm (CEST)

| | SESSION | SPEAKER | TIME |
|----|--|--|--------|
| 07 | CASE STUDIES IN ACP COUNTRIES AND RESULTS Community based forest Management | Ms. Marie-Ange Kalenga Policy Advisor – Forest, Governance & Development, FERN | 5 min |
| 08 | OPEN DISCUSSION  | ALL PARTICIPANTS | 30 min |
| 09 | WRAP UP AND CLOSING REMARKS | Dr. Pendo Maro Team Leader of the Intra-ACP GCCA+ Programme | 15 min |
| 10 | WEBINAR FEEDBACK SURVEY | Dr. Pendo Maro Team Leader of the Intra-ACP GCCA+ Programme | 1 min |



01. Opening Session

Welcome remarks

Representative from the
OACPS Secretariat



02. The Local Indigenous Knowledge Policy Paper Presentation

By Dr. Pendo Maro





Dr. Pendo Maro

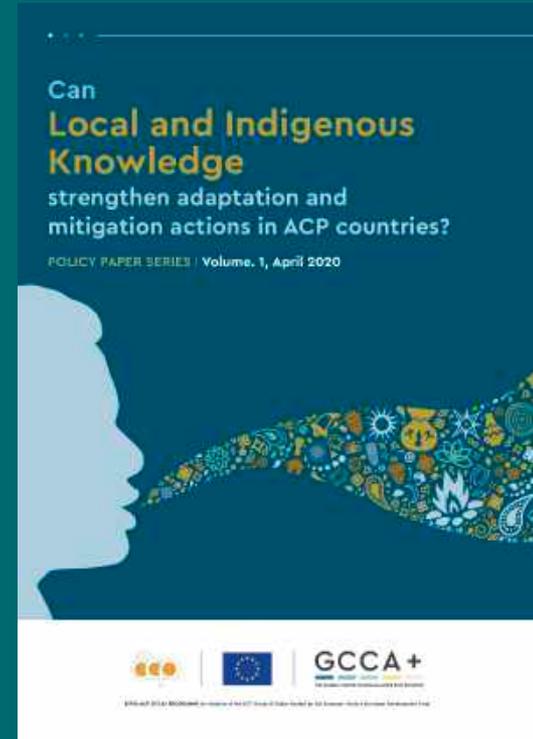
Team Leader Intra-ACP GCCA+ Programme

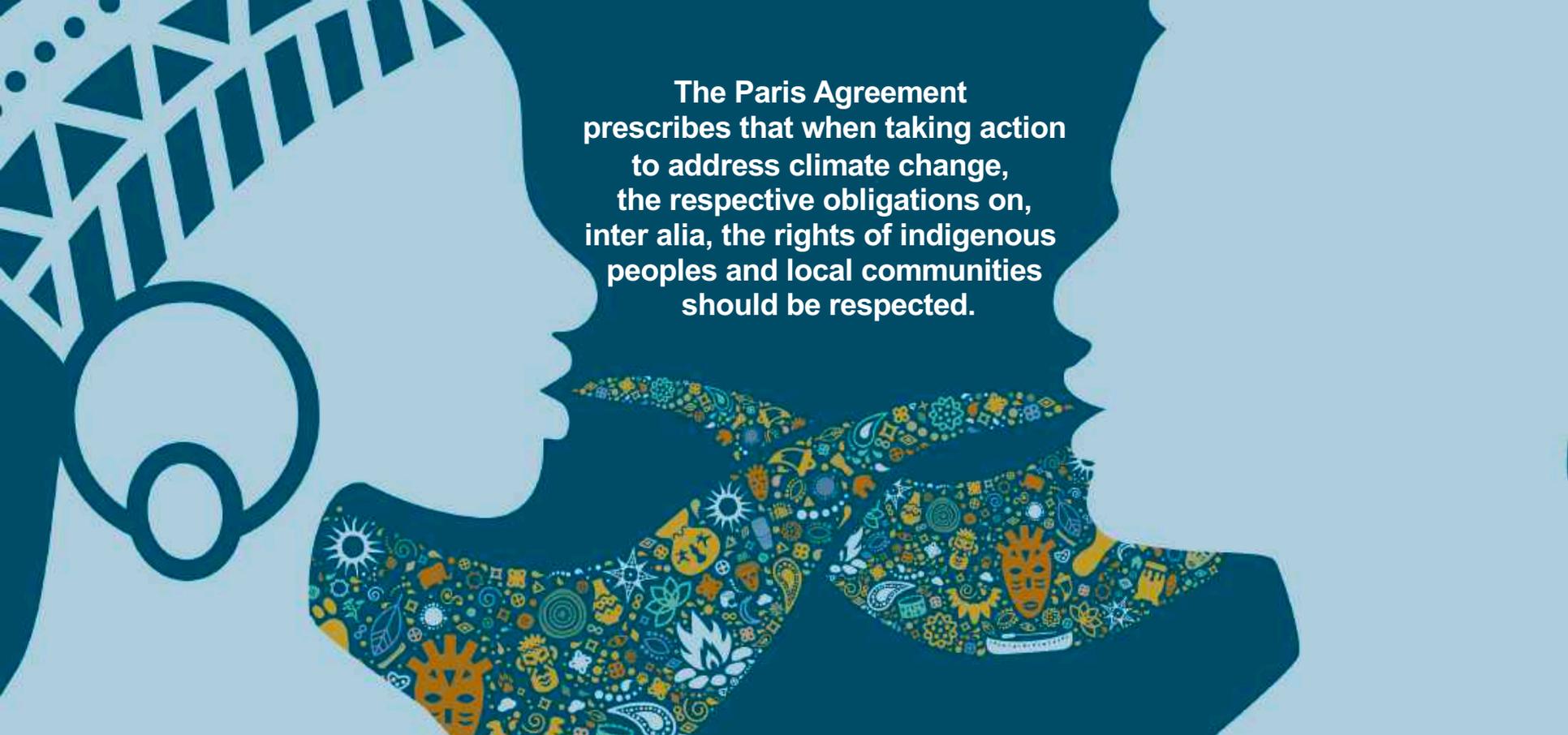
Dr. Maro has been the Team Leader for the Intra-ACP GCCA Programme for the past 8 years. She has been at the forefront of delivering technical advice on climate change and related policies and activities to the OACPS Secretariat.

- 20 years experience in climate change and environmental policy and processes, having worked as an academic as well as technical expert for public and private organizations on a broad range of issues.
- Over 15 years of experience in international consulting, including with the ACP Secretariat, the European Commission and the German Development Cooperation (GIZ), among others.
- Extensive research and work experience on the environmental, socio-political and economic contexts of the ACP region, European Union, and South-East Asia.
- Doctorate Degree in Sciences from the Vrije Universiteit Brussel (VUB) (summa cum laude):
<https://www.springer.com/gp/book/9789400718807>.



Overview of the Policy Paper





**The Paris Agreement
prescribes that when taking action
to address climate change,
the respective obligations on,
inter alia, the rights of indigenous
peoples and local communities
should be respected.**



GCCA+
THE GLOBAL CLIMATE CHANGE ACTION PLAN NETWORK

Key Challenges



- **Main issues include:**
 - **Lack of** recognition/sovereignty of LIK;
 - Challenges with **the type of information** (space-specific..., poor documentation);
 - Limited capacity/lack of **incentive** to engage;
 - Power **asymmetries**;
 - Suboptimal **communication channels**...



Way Forward



- **Can LIK contribute to adaptation and mitigation action? :**
 - Essential factors to consider: **participation, knowledge co-production and inclusiveness;**
 - **Impacts of barriers and filters:** e.g. institutional, capacity, financial or similar more 'structural' constraints;
 - **The integration** of LIK with scientific or other knowledge;
 - The need for **efficiency** in terms of language, communication, safety and patience.



Policy Recommendations



- **Promote dialogue and debate** to raise awareness;
- **Share knowledge and good examples** of actions and policies;
- **Encourage participation**, appropriate representation and scaling-up of knowledge;
- **Promote and technically support** regional knowledge platforms;
- **Improve dissemination and communication** on LIK.



03. FAO's work on Indigenous people's food systems

By Mr. Yon Fernández-de-Larrinoa





Mr. Yon Fernández-de-Larrinoa
Head of Unit, Indigenous Peoples Unit (PSPI),
Food and Agricultural Organisation (FAO)

An Agricultural Economist with a MABD on entitlements and food security from the UAM of Madrid. He joined FAO in 1998, working in the Policy Assistance Division; the Investment Center; and the Emergencies Division. Yon has worked in Asia, Latin America, The Caribbean and Africa. Before joining in 2010 the Partnerships and Advocacy Division, **he coordinated emergency-relief operations** in the field at the Haiti Earthquake, Peru Earthquake; H5N1 Influenza; and Asian Tsunami. Yon has been developing **innovative strategic approaches** in FAO such as: Seed fairs and vouchers; FAO Pastoralists Knowledge Hub; the Strategy for partnering with Civil Society; Guidelines for balanced Civil society representation and adopting Free Prior and Informed Consent (FPIC). From 2010 to 2014, he was the **Team leader** of the FAO Civil Society team, assisting with the reform of the World Committee of Food Security by supporting the participation of civil society in policy discussions. **In 2014, he started the Indigenous Peoples team**, incorporating in FAO's work indigenous peoples food systems, FPIC, Indigenous Youth and launching a Global Campaign on Indigenous Women. Since 2019, the FAO Indigenous Peoples Unit holds the Secretariat of the Friends of Indigenous Peoples in Rome chaired by Canada and in 2020 the Global Hub on Indigenous Peoples Food systems will be formally created.





Food and Agriculture Organization
of the United Nations



FAO's work on Indigenous Peoples Food Systems

Yon Fernandez-de-Larrinoa

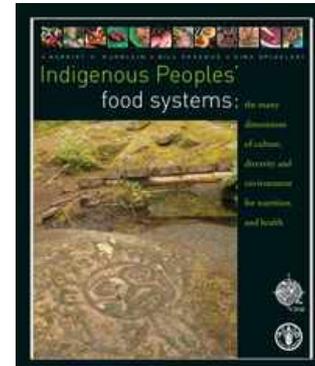
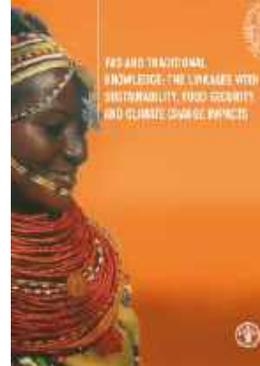
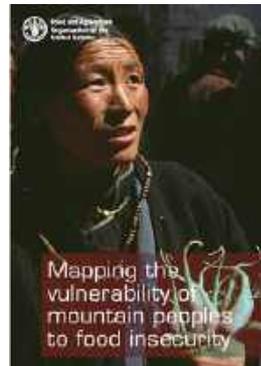
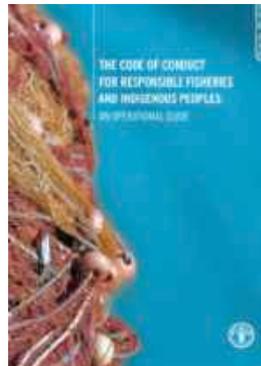
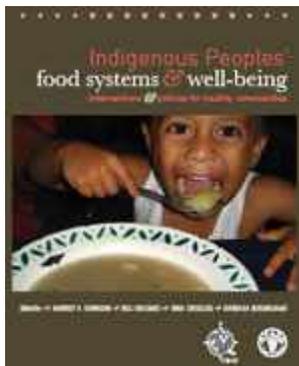
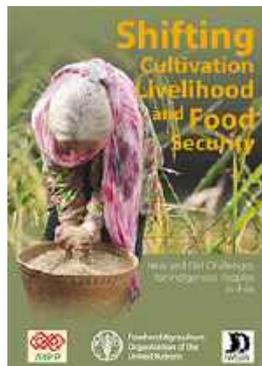
Head of Unit, FAO INDIGENOUS PEOPLES UNIT (PSPI)

Working for #ZeroHunger





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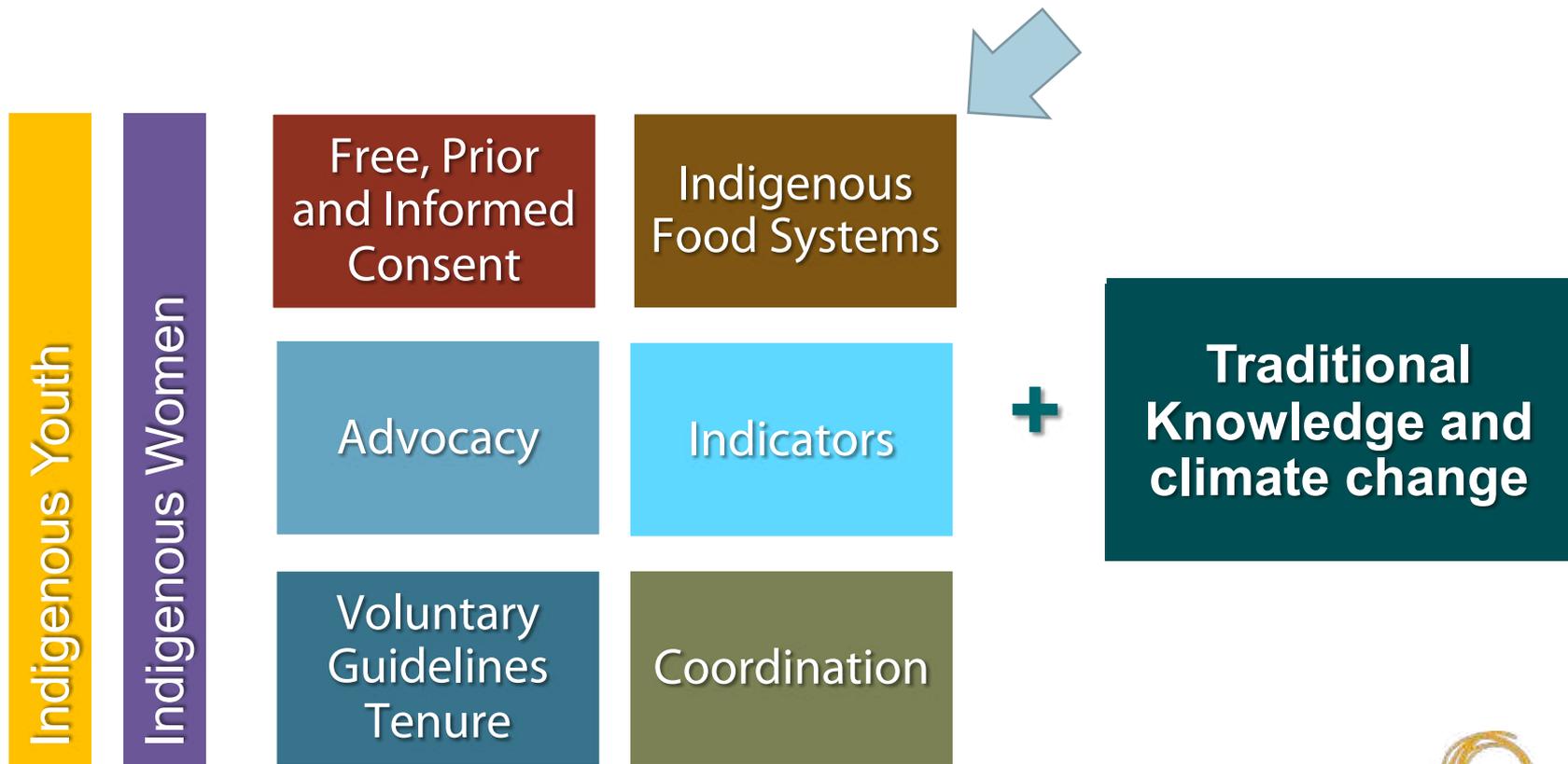


FAO: More than 70 publications on Indigenous Peoples' related topics available online for all

<http://www.fao.org/indigenous-peoples/en/>



Indigenous Peoples and FAO pillars of work





Food and Agriculture Organization
of the United Nations

Expert Seminar on Indigenous Food Systems: FAO, 7-9 November 2018

Commitment from different actors to strengthen the understanding, promotion and preservation of indigenous food systems to achieve Zero Hunger and the Agenda 2030

- **200 participants**
- **70 speakers** from **40 countries**
- More than **22 indigenous communities**
- More than **23 Governments**
- **20 Universities and research centers**



Working for  #ZeroHunger



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of the United Nations

Indigenous Peoples Food Systems





Sustainability of Indigenous food systems

Aboriginal people maintain one the oldest living culture in the world. Aboriginal people hunter-gatherers since **thousands of years**



60 000 BC

Agriculture 8000 B.C. In relation to 1 hour, it represents **10 minutes** of existence



8 000 BC

1945 Green Revolution In relation to 1 hour, it represents **few milliseconds** of existence



Now



Food and Agriculture Organization
of the United Nations

3 pillars interlinked in indigenous food systems: Holistic approach to food rooted in Traditional Knowledge

Health and nutrition

Indigenous
Food Systems

Traditional Knowledge
Language and culture

Natural resources
and biodiversity



What do indigenous food systems contribute to?

Biodiversity conservation

Holistic

Territorial management

Traditional knowledge

Management of energy sources

Culture & Spirituality

Resilient ecosystems

Social identity

**Indigenous
Peoples
Food
Systems**

A circular graphic of a globe with the text 'Indigenous Peoples Food Systems' centered over it.

Food diversification

Medicine

Specific governance

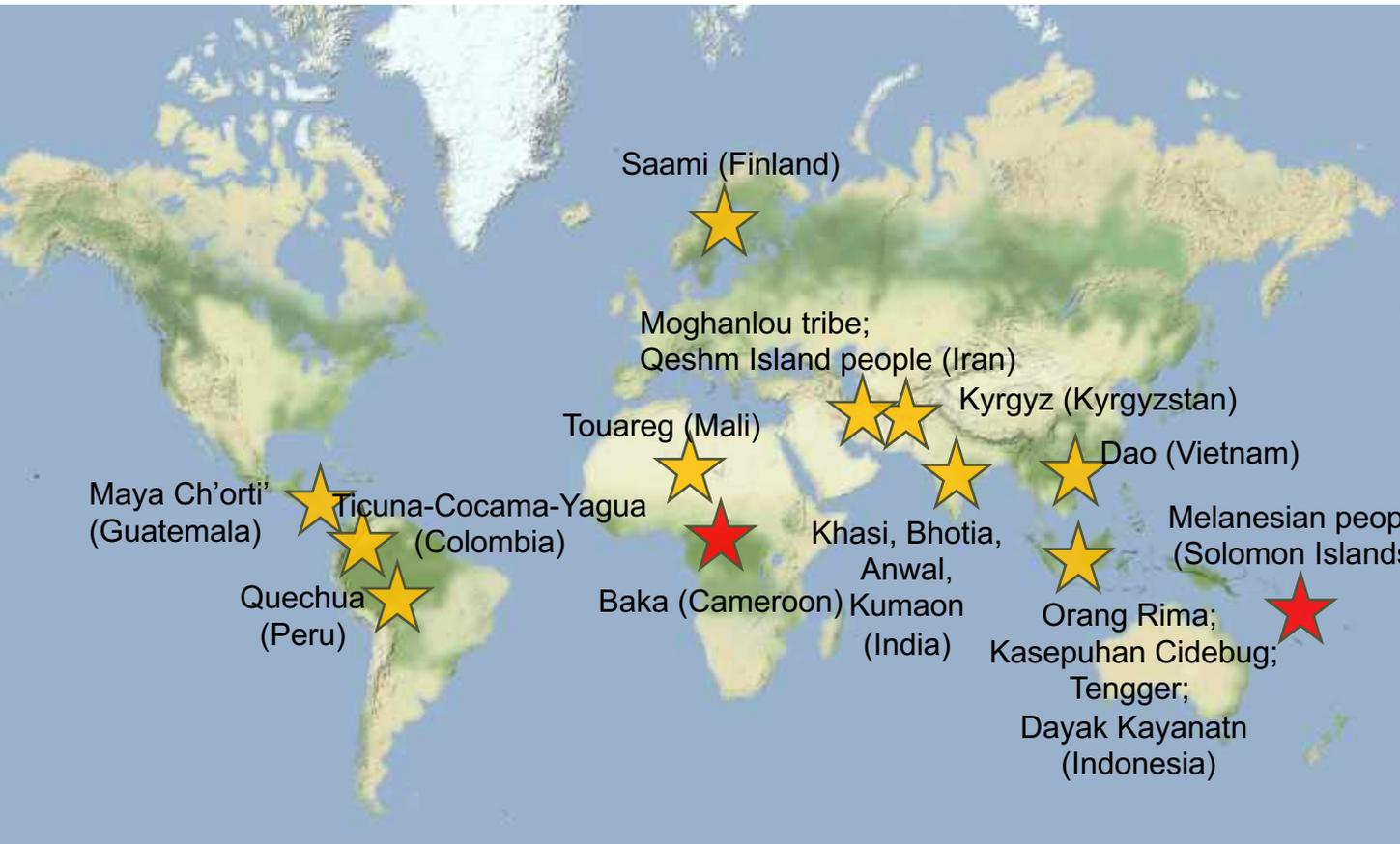
Adaptation to climate change

Solidarity mechanisms

Collecting, hunting, fishing, cultivating



Profiling of indigenous food systems (2018/2019)



Partner organizations and research institutions include:

- Food and Agriculture Organization of the United Nations
- Biodiversity International
- INDIGENOUS PARTNERSHIP FOR AGROBIO-DIVERSITY AND FOOD SOVEREIGNTY
- Instituto de Estudios para el Desarrollo Social
- Viện Nghiên Cứu Phát Triển Xã Hội / Institute for Social Development Studies
- mantasa
- nesfas
- Copanch'orti' / Misirraacaba
- RMI / The Indonesian Institute for Ethnic Empowerment
- Genesta / Centre for National Enterprise
- GRASSROOTS
- Parque de la Papa
- SAMEDIGGI SÄMITIGGI SÄÄMTE'GG SAAMELATERKRIAT
- THE CENTER FOR AFRICAN AREA STUDIES KYOTO UNIVERSITY / 京都大学アフリカ地域研究資料センター
- CGIAR
- RESEARCH PROGRAM ON Agriculture for Nutrition and Health
- IFOR / Working for #ZeroHunger



The Baka live in harmony with nature

Forest sourcing for food : Hunting (60 animal species), Gathering (90 wild species), Fishing (>15 common fish species), shifting agriculture (33 crops species)

Forest sourcing for livelihoods: building materials, cooking utensils, tools for hunting and gathering, firewood, medicines, ornaments, and cosmetics.

Local and renewable energy source: sunlight, rain, stream water, firewood and collective human labour

Sustainable intellectual input: traditional ecological knowledge and know-how.



M. Hirai/Kyoto University



The role of indigenous children in safeguarding traditional knowledge

The importance of inter- and intra-generational transmission of knowledge in Baka communities

“Techniques for bird catching, small rodent trapping, harvesting of insects, frogs, honey from stingless bees, mushrooms and all sorts of sweet fruits, are transmitted from child to child and without intervention of adults”

(Edmond Dounias, IRD)

Also, knowledge is transferred from older generations to younger ones by observation, active participation, and word of mouth.





The importance of traditional knowledge for climate resilience of indigenous food systems

Biotemporal indicators are perceived as changes of seasons:

- The onset of the **major dry season** (*yaka*) is recognized by the reduction of rainfall, hardening of the soil, falling of leaves of semi-deciduous species, as well as the appearance of a specific mushroom (*mosélé*), bird (*djombou*) and specific butterflies.



M. Hirai/Kyoto University





The food system of the Melanesian people is rich and diverse...

253 varieties of crops and animal species generated by the natural food system

51 species of aquatic species caught (tuna, turtles, sharks, eels, other seafood)

Food is sourced from home gardens (60%), wild (hunting, fishing, gathering ~15%), market (~25%)





...But their diet quality and the sustainability of the food system are declining

Monetarization of the food system (along with colonization)

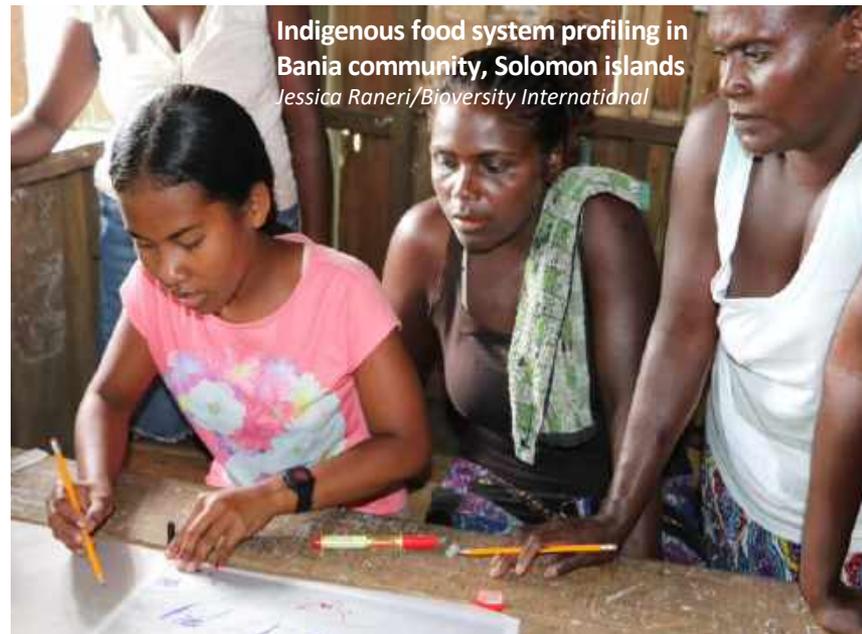
Traditional food is sold to get cash for children's school fees: ↓ Consumption of traditional food consumed + loss of traditional knowledge

↑ **imported and processed food** (high-rich sugar, salt and fat food) since 1990s.

↑ **Climate change effects:** sea inaccessible (for food and boats transportation to markets)

↓ Fish stock. Shift of diet from fresh fish to 2d grade canned tuna

Poor health outcomes: high blood pressure, high blood glucose, obesity and over-weight



Indigenous food system profiling in
Bania community, Solomon islands
Jessica Raneri/Bioversity International



Way Forward: A Global Hub on Indigenous Food Systems

1. **Learn** about Indigenous food systems

- Dedicated participatory research & documentation
- Evidence-based advocacy dialogue among indigenous peoples, governments and research centres

2. **Advocate & Preserve** Indigenous food systems

- Advocacy activities at international level (UNFCC, CFS, UN Nutrition Decade, CBD, Decade of Family farming, 2019 Year of Indigenous Languages, etc.),
- Advocacy activities at country level towards policy and decision-makers
- Intergenerational dialogues on traditional knowledge at local & national levels

3. **Promote** Indigenous Food Systems

- Intercultural education methods & capacity building of the youth
- Capacity building in entrepreneurship for indigenous peoples to develop opportunities of sustainable commercialization



Food and Agriculture
Organization of the
United Nations

Thank you!

Yon Fernandez de Larrinoa
FAO Indigenous Peoples Unit
@FAOIndigenous

Yon.FernandezLarrinoa@fao.org

Indigenous-peoples@fao.org

www.fao.org/indigenous-peoples/

04. Current work of the LCIPP

By Ms Hindou Oumarou Ibrahim





Ms Hindou Oumarou Ibrahim

Member of the Facilitative Working Group
of the International Indigenous Peoples
Forum on Climate Change (IIPFCC)

- **Environmental activist and member of Chad's pastoralist Mbororo community**, Hindou Oumarou Ibrahim began advocating for Indigenous rights and environmental protection at age 16, founding the Association for Indigenous Women and Peoples of Chad (AFPAT) to introduce new income revenue activities for women and collaborative tools such as 3D participatory mapping to build sustainable ecosystems management and reduction of nature-based resource conflicts.
- She is a **member of the Indigenous Peoples of Africa Coordinating Committee** and served as **co-chair** of the International Indigenous Peoples Forum on Climate Change during the historic UN Climate Change Conference (COP21) in Paris.
- She is dedicated to the protection of all Indigenous peoples, from the Congo to the Arctic, and the value of their knowledge in the fight against climate change. Ibrahim's work with indigenous communities at the local and global level has achieved recognition and support including, the Pritzker Emerging Environmental Genius Award, Daniel Mitterrand Prize and Hindou's TED talk on how Indigenous knowledge meets science to solve climate change.





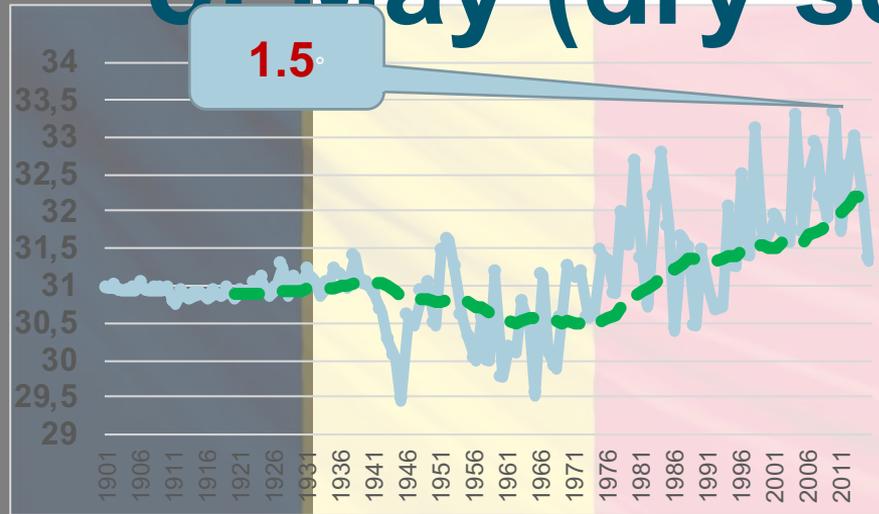
Who are M'bororo people : a quick reminder

M'Borobo are indigenous nomadic cattle holders of the Sahel

They live across five countries around lake Chad

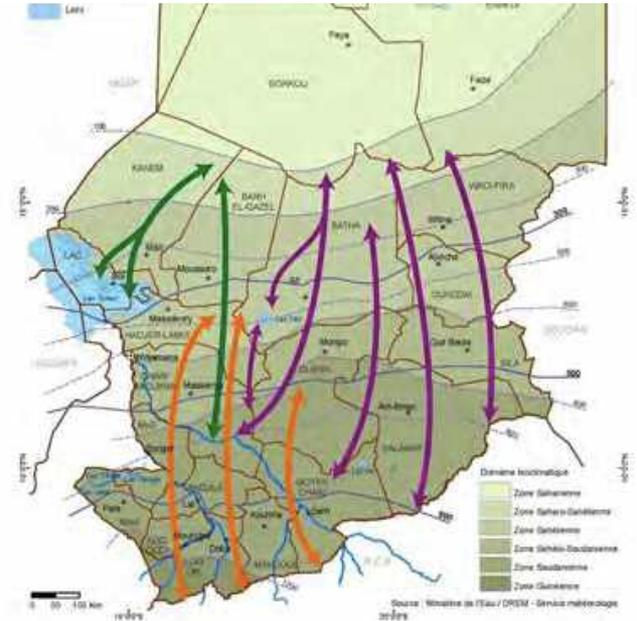
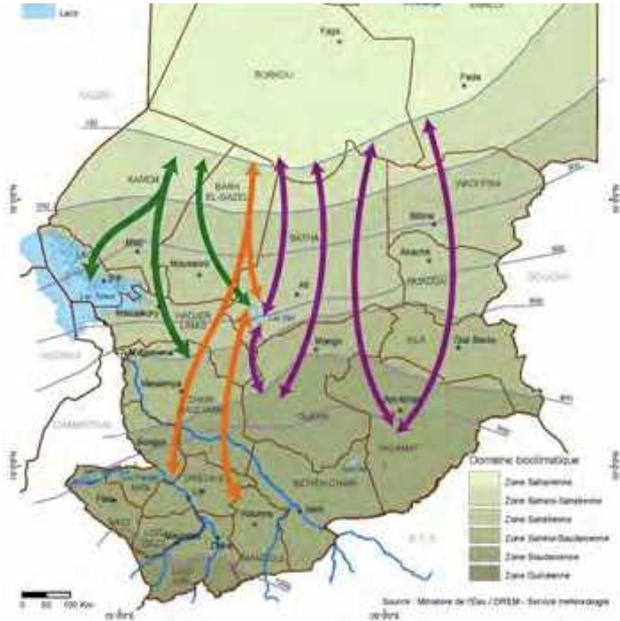
They follow the rhythm of seasons to find pasture and water for their animals

Temperature evolution 1901-2015 in Chad, for the month of May (dry season)



Evolution of annual transhumance caused by climate change

Socio economic consequences of climate change : conflicts between communities



Mbororo Knowledge to predict weather

The size and the shape of fruits produced by a certain palm tree may indicate whether or not the coming year will be good

Abundant offspring of a certain type of lizard is a predictor of a good season

Changes in the direction of the wind from East to West are an indicator of rain that will last for days

Although the sky may be clear, the occurrence of a particular insect species indicates that it is about to rain



Lake Chad Nomadic 100%

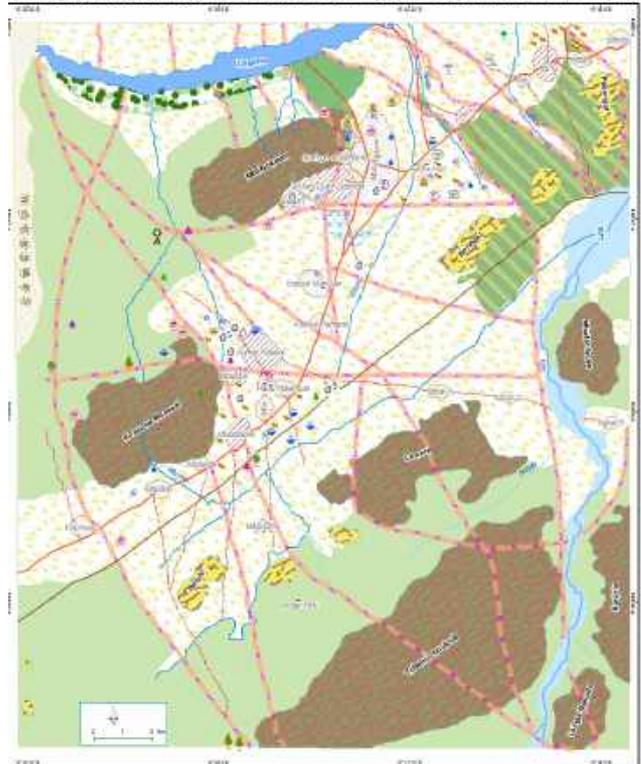
5 seasons ecosystemic
bases

South of Chad Semi nomadic

7 seasons ecosystemic bases

**Indigenous Peoples' Traditional
knowledges**

Carte de superposition d'utilisation des terres autour de la ville de Mbitakoum dans la province de Mout de Lam au Tchad



Indigenous peoples' traditional knowledges for climate and biodiversity – 3D mapping of natural resources

IPs knowledge can help international and national policies

The creation of an IPs traditional knowledges platforme under the Paris Agreement:

National & international levels

Platform between indigenous peoples and meteorology experts and national government since 5 years

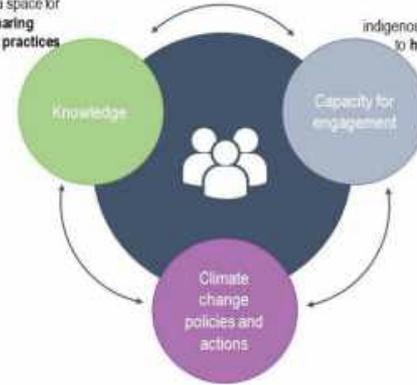
We generate information to the methodologies peoples

Influence the NDCs HR, gender and biodiversity

NAPA, NAPs and national communication on IPs knowledge

Three core functions of the local communities and indigenous peoples platform

Platform can provide a space for documenting and sharing experience and best practices



Platform can build capacities of indigenous peoples and local communities to help enable their engagement in UNFCCC and other relevant processes, including supporting the implementation of Paris Agreement

Platform can facilitate integration of diverse knowledge systems, practices and innovations, and the engagement of indigenous peoples and local communities in relevant climate change related actions, programs, and policies



05. UNESCO's work on LIK

By Dr. Nigel Crawhall





Dr. Nigel Crawhall

Chief of Section, Small Islands
and Indigenous Knowledge, UNESCO

- *Chief of Section, Small Islands and Indigenous Knowledge, Natural Sciences Sector, UNESCO*
- *Former director of Secretariat of the Indigenous Peoples of Africa Coordinating Committee;*

- *Former Chair of the IUCN CEESP Theme on Indigenous Peoples, Local Communities, Equity and Protected Areas;*

Various publications on indigenous knowledge, indigenous peoples' rights, participatory mapping, drylands, protected areas and endangered languages.



Knowing our Changing Climate in Africa

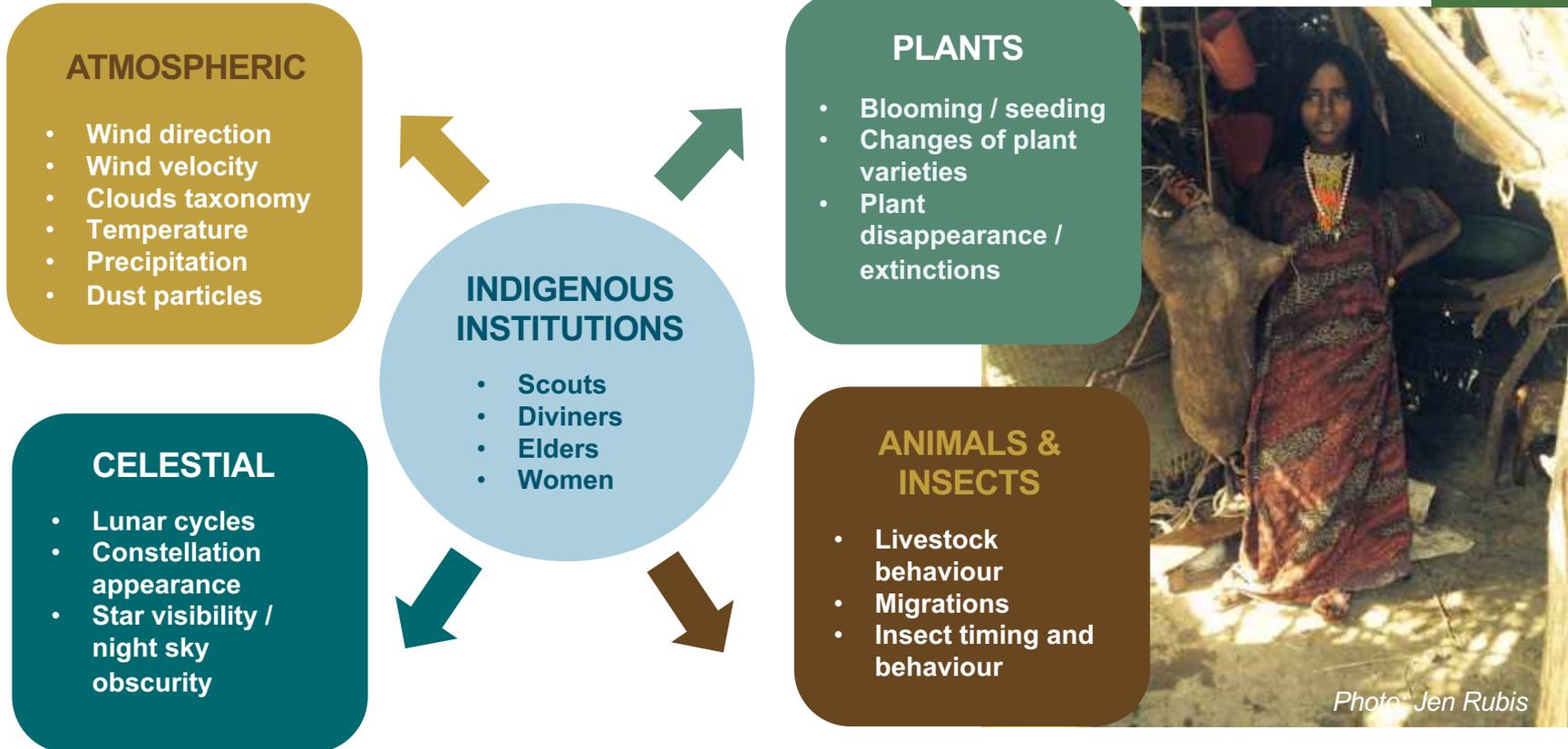


Photo: Nigel Crawhall

Combining best possible climate knowledge

- **Improving weather forecasting and climate adaptation** through dialogue of science and indigenous peoples;
- **Indigenous pastoralists research their knowledge, observations and decision-making** regarding weather, climate and adaptation;
- **Facilitating pastoralist dialogues** with national and international meteorologists and other scientists;
- **Seasonal calendars and use of natural indicators** to predict seasonal forecasts; improved downscaling of forecasting and microclimate knowledge.
- **Policy Briefs shared at UNFCCC COP24**
- **Burkina Faso, Chad, Ethiopia, Uganda, Tanzania and Kenya;**

African indigenous knowledge of seasonal indicators for weather & climate forecasting



06. Best practice from ACP Regions

Dr. Mclay Kanyangarara





Dr. Mclay Kanyangarara

Climate Change Advisor, Common Market for Eastern and Southern Africa (COMESA)

- **Dr. Mclay Kanyangarara is the Climate Change Advisor at the Common Market for Eastern and Southern Africa (COMESA)** head quartered in Lusaka Zambia who provides overall leadership and strategic direction to the Climate Change Unit;

- Dr Kanyangarara holds a **Doctorate Degree from Oxford University** and has previously worked with the United Nations Industrial Development Organization (UNIDO). At COMESA , he spearheaded the formation of the COMESA Climate Change Unit in 2009 which notable among other projects successfully implemented a Tripartite Climate Change initiative that brought together the three Regional Economic Communities (RECs).



LOCAL AND INDIGENOUS KNOWLEDGE

Strengthening Adaptation and Mitigation: An African Perspective

By Mclay Kanyangarara - COMESA



Contents.

1. LIK in Africa
2. Challenges and opportunities
3. LIK in action
4. Supporting the countries
5. ACP Engagements



LIK IN AFRICA

Remote communities are not easily accessible making LIK the only source of climate information for the people

These communities are the best frontline of an ecosystem EWS for climate sensitive biodiversity.

SUCCESS FACTORS

LIK is the default setting for many communities in Africa.

Hence mainstreaming LIK into climate actions and resilience building ensures buy-in, ownership and enthusiasm – the key ingredients for success.



CHALLENGES

- Ingress of the ‘Scientific Way’ **requiring proof.**
- It is waning with **the death of older people.**
- **Unprecedented changes.**

OPPORTUNITIES

- **Building synergy between science and LIK.**
- **LIK is not static: it learns.**
- **Policy, institutional and budgetary support to get the most out of LIK.**



LIK IN ACTION

- **Nature observations** to predict climate and inform adaptation and mitigation actions
- **Ecosystem-based CSA** is LIK with a new title
- **Medicines** e.g. artemisa in Madagascar for COVID-19

COMESA SUPPORT

- **CSA upscaling in 5 MS**
- **Biopesticides in 4 MS**
- **Circular farming in 1 MS**
- **MS can request any support**



ACP ENGAGEMENT

- **Exchanges** – ‘New ideas come to those that use their feet’
- **Cross fertilisation** of LIK

THE MEANS

- **Exchanges** – COVID-19 permitting
- **Webinars**
- **Virtual demonstrations**
- **Research and documentation**



06. Best practice from ACP Regions

Dr. Maguette Kaire





Dr. Maguette Kaïre

Forestry Expert, CILSS Focal Point of
GCCA+ regional project

- Maguette KAIRE holds a **PhD "Biosciences of Environment"** from the University of Provence (Marseille, France)", a **Master "population –environment"** from ISFRA (Mali) and a **DESS" agrarian systems and environment** from CRESA Niamey in Niger, and a diploma in forest engineering.

He holds the post of **forestry expert at the AGRHYMET regional center** in Niamey, Niger. He is the **CILSS focal point of the regional GCCA+ project** (Global Climate Change Alliance plus). He is also responsible for climate change mitigation issues with as main attributions: the development of methods for estimating, monitoring and modeling the carbon dynamics of forest and agroforestry ecosystems in the CILSS-ECOWAS region; strengthening countries capacities to access the carbon market; running a bio-carbon laboratory; He is a member of the CILSS team responsible for training countries on "Integrating climate change into national policies and strategies"

Before joining the AGRHYMET Regional Center, Dr Maguette KAIRE was **head of the agroforestry department at the University of Ziguinchor in southern Senegal** (from 2008 to 2012) and worked for 20 years at the National Center for Forest Research (CNRF) / Senegalese Institute for Agricultural Research, as a researcher (1999-2008) and focal point of ICRAF (world agroforestry center)



Assisted Natural Regeneration (ANR) pillar of resilience and greening in the Sahel

Dr Maguette KAIRE

CILSS focal point of GCCA+ AO regional project

Maguette.kaire@cilss.int



Contents.

1. What prompted farmers to practice ANR in their fields
2. Impacts of ANR
3. Scaling challenges



What prompted farmers to practice ANR in their fields

- **The ecological crisis:** recurrent drought: we had to fight against desertification
- **Population growth** has induced a process of agricultural intensification
- **Farmers' appropriation of trees**
- **External interventions** (NGOs, projects, etc.)
- An "oil stain" effect following the observation of **the multiple impacts of ANR** contributed to a spontaneous diffusion



IMPACTS OF ANR

- This practice, which began in the mid-1980s, was more effective to green the area and **rehabilitate degraded land** that any project of planting trees on a large scale in Africa (REIJ, C. and Steeds, D. (2003));
- Practiced throughout the Sahel, RNA has **improved food security**, **adaptation** and **mitigation** of climate change.

RNA in Niger: Nearly 5 million ha (around 200 million new trees)

Aerial view of the evolution of the density of trees (black dots) in Galma, Niger in 1975 and 2003



Scaling up the RNA considerably improves the **resilience of vulnerable populations** and constitutes an important **carbon sink**

Scaling challenges

- **Develop or strengthen the value chains** of agro forestry products;
- **Valuing other ecosystem services;**
- **Fill in the knowledge gaps** and restore this knowledge in efforts to scale up;
- **Securing land on degraded land** to be recovered by the RNA;
- **Improve the absorptive capacity of producers.**



06. Best practice from ACP Regions

Mr. Carlos Fuller





Mr. Carlos Fuller

International and Regional Liaison Officer,
Caribbean Community Climate Change Centre
(CCCCC)

- **Mr Carlos Fuller is the Regional and International Liaison Officer** at the Caribbean Community Climate Change Centre. His primary responsibility is to coordinate CARICOM Member States in the international climate change negotiations.
- He is a Meteorologist and was the **Chief Meteorologist** in the National Meteorological Service of Belize. He has represented Belize in the climate change negotiation process since 1990. In that capacity he served as the Chair of the Subsidiary Body for Scientific and Technical Advice (SBSTA) of the United Nations Framework Convention on Climate Change UNFCCC) in 2017 and 2018.
- He is presently the **Chief Negotiator on Climate Change for the Alliance of Small Island States (AOSIS)** under the Chairmanship of Belize. He is also the Special Advisor to the President of the Commission on Climatology of the World Meteorological Organization (WMO) on High-level Science-Policy Climate Related Issues. He holds the George Price Lifetime Achievement Award for Emergency Management and the Officer of the Order the British Empire (OBE) for public service.



Contents.

1. **Local and indigenous Peoples in the Caribbean**
2. **Case Studies**
3. **Opportunities for use of Indigenous Knowledge**
4. **Support Required**
5. **Recommendations**



Indigenous Peoples in Belize, Guyana and Suriname:

- In Belize: 2 peoples, ~55,000 persons, 17-20% of the population.

Local Communities in Antigua and Barbuda, the Bahamas, Dominica, Grenada, Haiti, Jamaica, St Kitts and Nevis, Saint Lucia, St Kitts and Nevis, and Trinidad and Tobago:

- Both groups have important Indigenous and Local Knowledge to share.
- Both groups are among the most vulnerable and require support to address climate change.



Rio Bravo Carbon Sequestration Project in northwestern Belize

- **Project commenced in 1996.**
- Between 2002 and 2010, it **prevented emission of 1,660,260 metric tons of CO₂** by preventing conversion of forest to mechanized agriculture.
- Management Area consists of **extensive hardwood forests, pine savannah and wetlands.**
- Hosts healthiest and **most plentiful population of jaguars in Central America.**
- Home to **200 species** of trees, **400 species** of birds (20-25% migratory species), **70 species of mammals** and **39 species of conservation concern** including the Jaguar, Puma, Margay, Ocelot, the Howler and Spider Monkeys.



- Successful because Indigenous Peoples and Local Communities in area were **invited to use forest sustainably.**
- **Sapodilla tree** bleeding to harvest chicle.
- Chicle was used in early 1900s for chewing-gum, surgical tape, dental supplies and a base for chemical manufacture. It is now **a tiny niche market.**
- Indigenous Peoples and Local Communities are also **Field staff and rangers.**



Ya'axche, elize Agroforestry Project

OBJECTIVE:

Enhance adaptive capacity of rural community and alleviate pressure on natural resources from impacts of climate change.

ACTIVITIES:

- **Reduce rate of deforestation for agricultural conversion** and reduce vulnerability of local communities to climate change effects within the MG
- **Arrest degradation of water catchment area** in Maya Mountain North Forest Reserve
- **Reduce occurrence of wildfires** within Toledo's rural communities
- **Awareness building of climate change** and adaptation measures



1. 5Cs staff conducting a field inspection of project progress
2. Water cistern for cacao nursery
2. A villager involve with the project

Saint Lucia Agroforestry Project

OBJECTIVE:

Project provided support for replanting of aged cocoa plantations and establishment of new areas within forest zones to support small farmers, increasing their livelihoods and income while reducing deforestation.



1. Female farmer stands proudly beside cocoa plant in the field
2. Cocoa seedlings being distributed to farmers
3. Inter-cropping cocoa with banana within the forest in Saint Lucia

Electrification of Kalinago Indigenous Community, Dominica

Project supported electrification of Kalinago indigenous community in Dominica using renewable energy provided by a Photo Voltaic (PV) array system.

SYSTEM INCLUDED

- a 125-KW grid-connected unit to provide power for 145 houses previously connected to the public power supply;
- 7 individual grid connected systems to provide power for public buildings such as schools, libraries, health centre and the Kalinago Council office; and
- 15 individual battery connected systems providing power for 15 houses not previously connected to the public power supply



1. PV at the Kalinago Council office
Roof-mounted PV providing power to the
2. community library and resource centre
3. The 125-KW grid-connected power generation system



Indigenous and Local Knowledge

- These communities are always in the field
- They observe nature, see and recognize changes
- Their knowledge is passed down: weather, flora, medicinal plants, fauna, and interlinkages. Knowledge is holistic, not compartmentalized.
- As a result of response to COVID 19 pandemic, supply lines have been disrupted.
- We need the Indigenous and Local Knowledge for food supply
- Cassava, sweet potato and other tubers



SUPPORT REQUIRED

- Renewable sources of energy as LCIP are far from electricity grid
- Access to water as a result of drying conditions
- Assistance to enhance natural resources and ecosystems
- Assistance to maintain knowledge systems, including language
- Safeguarding intellectual property

RECOMMENDATION

Establish regional platforms to enable representatives of LCIPP Facilitative Working Group to exchange information between regions and international community





Professor Elisabeth Holland

Norway-Pacific Chair in Oceans and Climate Change at the University of the South Pacific and the University of Bergen

- **Professor Elisabeth Holland is the Norway-Pacific Chair in Oceans and Climate Change** at the University of the South Pacific and the University of Bergen.
- Professor Holland's research focuses on the **ocean-climate nexus, climate change and sustainability in the Pacific Islands** where she has worked for more than eight years.
- Prof. Holland is an internationally recognized scientist for her work in the **science-policy interface and her Earth System research**.
- She was a **co-recipient of the 2007 Nobel Peace Prize for her contribution to the Intergovernmental Panel on Climate Change (IPCC)**. She is an author of five of the six IPCC reports, including the recently released Special Report on Ocean and the Cryosphere. Professor Holland has served as a science representative for Fiji, the Federated States of Micronesia, Tuvalu, and Solomon Islands in IPCC and UNFCCC negotiations.



When Tropical Cyclone Harold meets the novel coronavirus

Professor Elisabeth Holland, elisabeth.holland@usp.ac.fj
Norway-Pacific Chair Oceans and Climate Change,
University of the South Pacific, and University of Bergen
28 April, 2020



COPERNICUS MARINE ATLAS FOR THE PACIFIC OCEAN STATES



We have created an Atlas for the Pacific Ocean States that delivers ocean data to address the needs of decision-makers and to meet climate directives. It responds directly to Fiji's requests at the 2017 United Nations Oceans Conference for the Sustainable Development Goal (SDG) 14 (for life below water) and in the 2017 COP23 conference for SDG13 (on climate action).

OCEAN HEAT CONTENT (OHC)

Units: Watt/m²
Trend from 1993 to 2017 / 0-700 m

| | | | | | |
|--------------------------------------|---------------------|--------------------------------|-------------------|--------------------------------|-------------------|
| Pacific Islands Total area | +1.2 +0.7 | Western Pacific Islands | +1.9 ± 1.5 | Central Pacific Islands | +0.8 ± 0.7 |
|--------------------------------------|---------------------|--------------------------------|-------------------|--------------------------------|-------------------|

Ocean heat Content (OHC) includes water temperatures at the surface and beneath the ocean surface. It is used to track changes in sea level, stratification, ocean currents, as well as in marine ecosystems. The ocean is a major heat source for global

atmospheric circulation and has important implications for regional and global climates, including severe events. With rising ocean temperatures, marine ecosystems are also damaged. Many species suffer or die off, putting economies and food security at risk.

Temperatures are rising in the surface and deeper waters of the Pacific Ocean around the islands

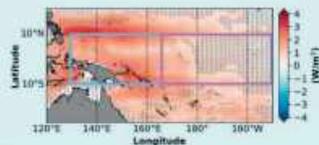


Figure: Upper ocean heat content (0-700 meters) in Watts per square metre (W/m²) trend from 1993-2017.

In this section, the entire figure domain represents "Pacific Islands total area", the blue box represents "Western Pacific Islands" and the purple represents "Central Pacific Islands".

THE PACIFIC ISLAND STATES ARE PARTICULARLY VULNERABLE TO THE CHANGING MARINE ENVIRONMENT.

They face unprecedented threats to the 3 pillars of sustainable development: **economy, environment, and society.**

Did you know?



In addition to the threats caused by ocean warming, sea level rise and the decrease in phytoplankton, the Pacific Island States lie in a path where many devastating storms pass. Hurricanes / typhoons / cyclones extract heat from the surface and sub-surface of the ocean, which acts as a source of energy making them stronger and last longer. Sea surface temperature and ocean heat content are important variables for forecasting and understanding these storms and other weather events.

SEA SURFACE TEMPERATURE (SST)

Units: °C/year
Trend from 1993 to 2017

| | | | | | |
|--------------------------------------|----------------------|--------------------------------|---------------------|--------------------------------|---------------------|
| Pacific Islands Total area | +0.02 +0.1 | Western Pacific Islands | +0.02 ± 0.01 | Central Pacific Islands | +0.01 ± 0.02 |
|--------------------------------------|----------------------|--------------------------------|---------------------|--------------------------------|---------------------|

Sea surface temperature is used to assess climate change impacts and is essential for weather and extreme event prediction (such as cyclones). It is also used to assess ecosystem health. For example, warming

can lead to coral reef damage (coral bleaching) and biodiversity loss, putting coastal production, economies and food security at risk.

Sea surface temperatures are rising throughout the Pacific Ocean around the islands

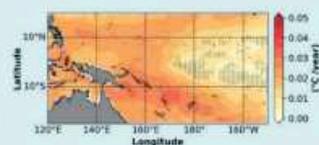


Figure: Sea surface temperature trend from 1993-2017 in degrees Celsius per year (°C/year). Blue dots indicate areas where data is sparse and there is less confidence.

THERMOSTERIC SEA LEVEL

The sea level is rising mainly due to melting ice and thermal expansion (water expands when heated, a phenomena referred to as thermosteric sea level rise). About 40% of contemporary

global sea level rise can be attributed to ocean thermal expansion. In a regional level, the thermosteric effect can dominate the sea level change in the area.

The sea level is rising throughout the Pacific Ocean around the islands

The Pacific Ocean is warming significantly and this goes hand-in-hand with the sea level rise in the region.

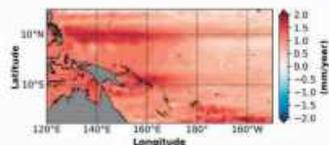


Figure: Sea level trend in millimetres per year (mm/year) from 1993-2017

SEA LEVEL

Units: mm/year
Trend from 1993 to 2017

| | | | | | |
|--------------------------------------|----------------------|--------------------------------|-------------------|--------------------------------|-------------------|
| Pacific Islands Total area | +3.6 ± 2.5 | Western Pacific Islands | +4.8 ± 2.5 | Central Pacific Islands | +2.8 ± 2.5 |
|--------------------------------------|----------------------|--------------------------------|-------------------|--------------------------------|-------------------|

Sea level is an important variable to inform climate adaptation and coastal planning. Sea level rise can seriously affect human populations

in coastal regions and natural environments on land as well as marine ecosystems.

CHLOROPHYLL-a (Chl-a)

Units: %/year
Trend from 1997 to 2017

| | | | | | |
|--------------------------------------|------------------------|--------------------------------|--------------------|--------------------------------|---------------------|
| Pacific Islands Total area | -0.4 ± 0.001 | Western Pacific Islands | -0.4 ± 0.02 | Central Pacific Islands | -0.7 ± 0.001 |
|--------------------------------------|------------------------|--------------------------------|--------------------|--------------------------------|---------------------|

Nearly all ocean life depends on phytoplankton health. Chlorophyll-a is used as a proxy to monitor phytoplankton, which is the base of the marine food web. Nearly half of all the production of organic matter on Earth takes place in the ocean. Phytoplankton photosynthesis contributes to more than half of

the oxygen content in the Earth's atmosphere and it consumes an enormous amount of carbon. Changes in phytoplankton populations can impact ecosystems and biogeochemical cycling, which in turn impacts economies and food availability.

Overall decrease in phytoplankton in the Pacific Ocean around the islands

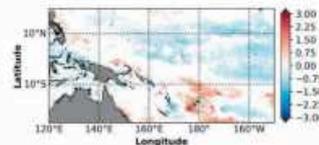
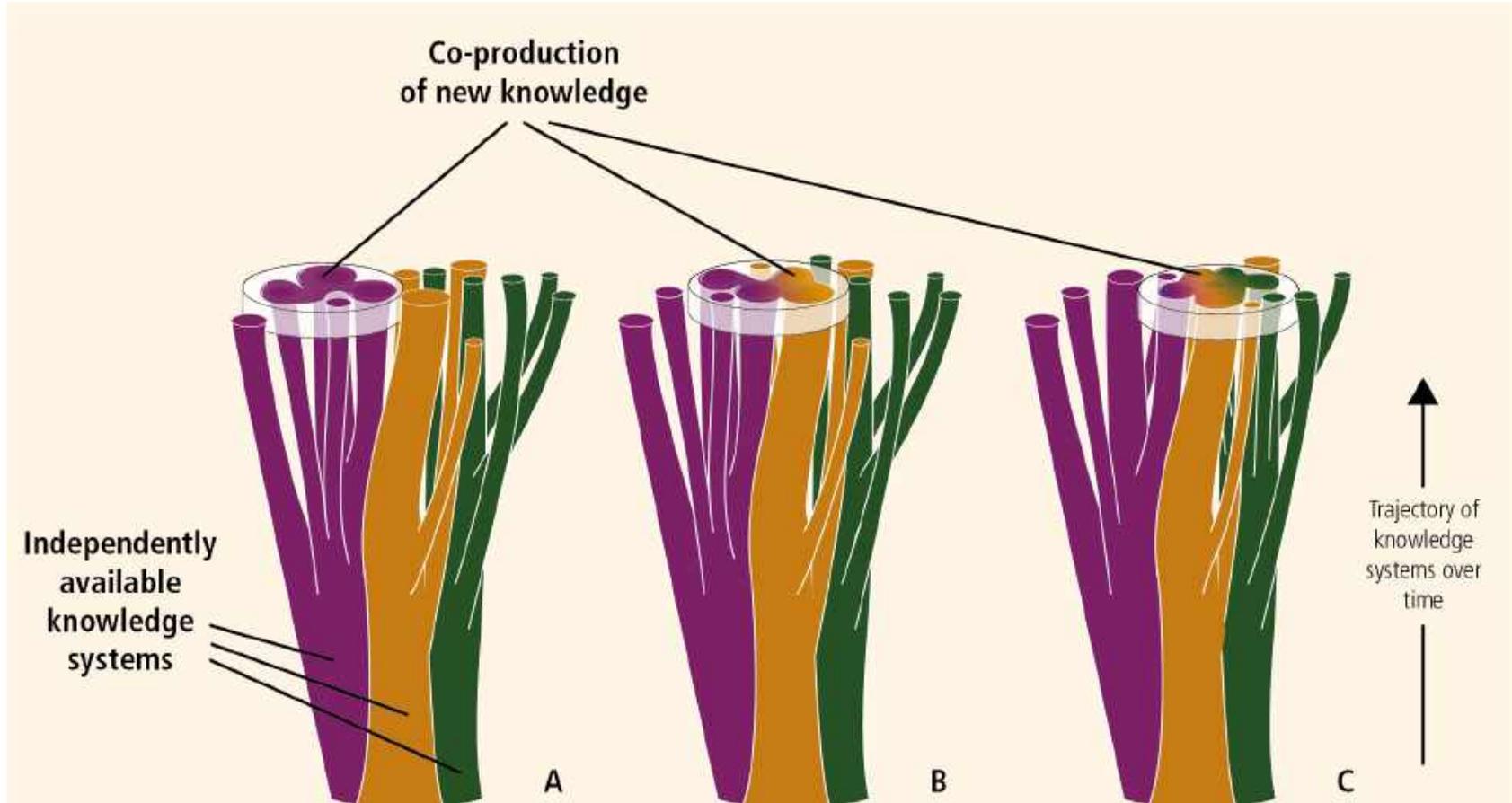


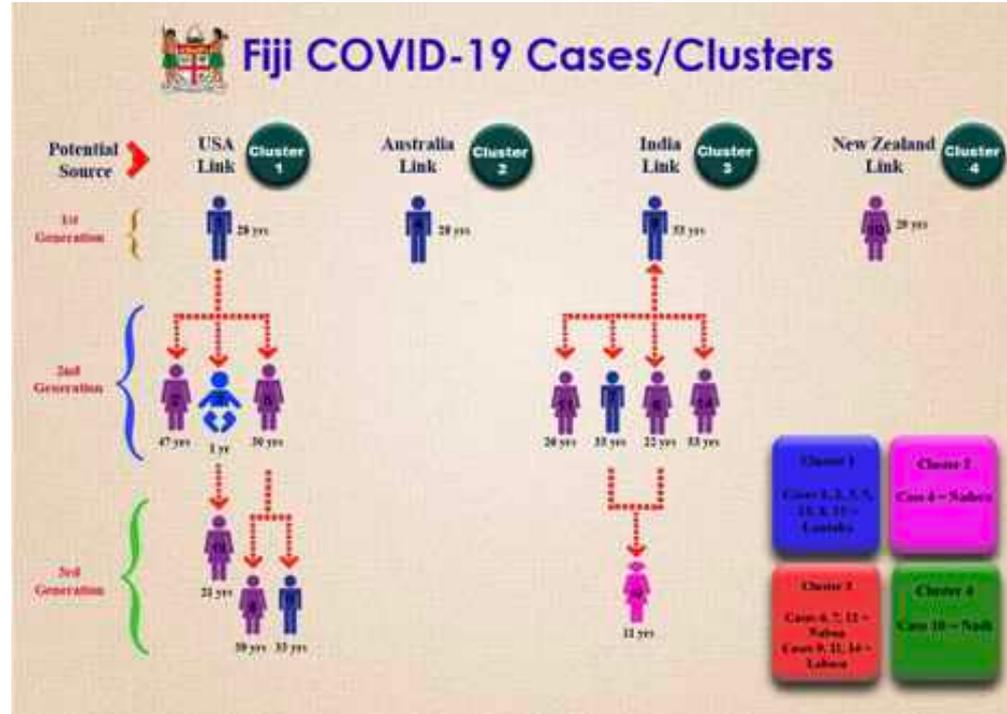
Figure: Chl-a trend from September 1997- December 2017 as percentage per year.

The Copernicus Marine Atlas for the Pacific Island States shows sustained and drastic ocean warming, sea level rise, and a decrease in the base of the marine food chain (phytoplankton).

Combining Scientific, Indigenous and Local Knowledge



The novel Corona Virus



- Fiji confirmed COVID-19 cases: 18 cases as of 28 April 2020, no new cases in the last week.

- Date of Fiji's first confirmed case: 19 March 2020.

- Sixteen Pacific countries and territories without a confirmed case of COVID-19: American Samoa, Cook Islands 🇫🇮, Federated States of Micronesia 🇨🇫, Kiribati 🇰🇮, Nauru 🇳🇷, Niue 🇳🇺, Palau 🇵🇫, Pitcairn, Republic of the Marshall Islands 🇲🇫, Samoa 🇳🇲, Solomon Islands 🇸🇧, Tokelau 🇹🇰, Tonga 🇹🇴, Tuvalu 🇹🇺, Vanuatu 🇻🇺, Wallis & Futuna

Independent countries with control of their own borders are doing better than French and US territories.

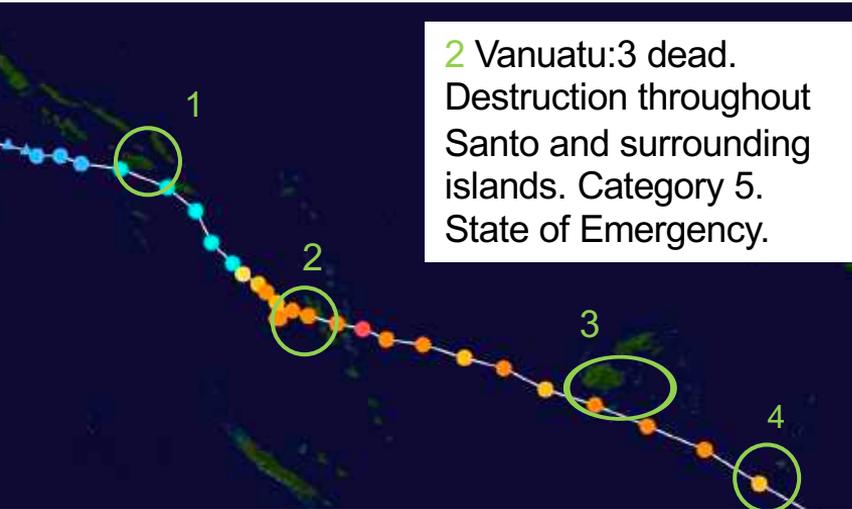


Tropical Cyclone Harold

Easter Week

1 Solomon Islands 27 swept off ferry by storm surge Ferry accident COVID evacuation from capital of Honiara. State of Emergency.

2 Vanuatu: 3 dead. Destruction throughout Santo and surrounding islands. Category 5. State of Emergency.

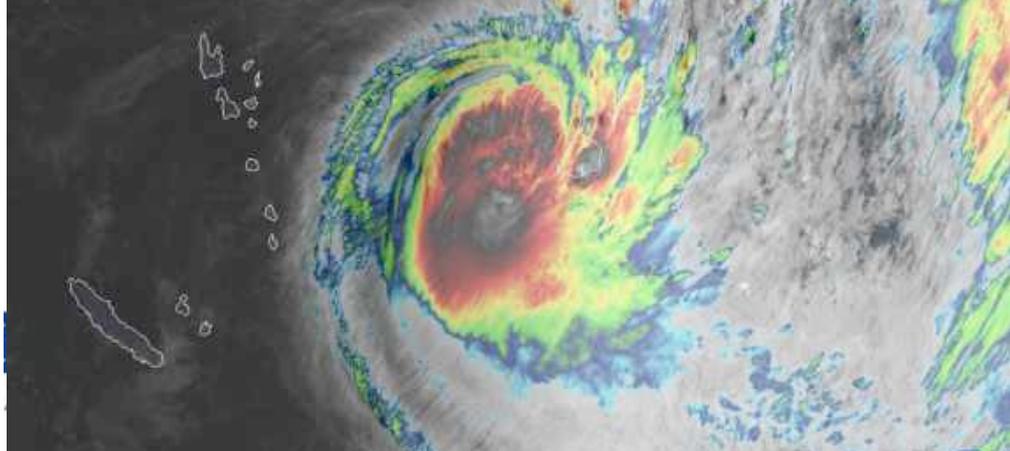


3 Fiji, 2 tornados. Flooding. 1835 in evacuation centers. State of Emergency.

4 Tonga destructive storm surge, no lives lost, resorts devastated after TC Gita rebuild



'It's all gone': Cyclone Harold cuts a deadly path through Vanuatu



Days after the cyclone hit Vanuatu

“My family on North Malekula are safe despite all the root crops have been totally destroyed. Yesterday, I also was informed by my family on Malakula that my dad’s smaller brother died at Santo hospital when TC Harold blew off the roof of the emergency room he was sleeping in. He was so panic as there were no doctors around as well. No electricity due to power cut by the hurricane. Only my smaller brother was there but could not do anything to protect him so he finally died at 1:00 am on that night. As doctors did not allow him to be put into the cold room, so my brother with the help of 4 other boys had to dig a hole in the municipal cemetery and bury him that evening.”

“Otherwise, family on Malekula are safe. Unfortunately, I lost two of my cattle but its better than losing another family member.”

According to Montin Romone, ni-Vanuatu EU GCCA+ MSc Scholarship recipient in Climate Change attending the University of the South Pacific



Thank you

- *Vinaka vakalevu*
- *Fa'afetai tele lava*
- *Malo au'pita*
- *Tank iu*
- *Meral ma Sulang*
- *Ko rab'a*
- *Obrigado*

- *Tank yiu tumas*
- *Tenkyu tru*
- *Fakafetai lasi*
- *Kommol tata*
- *Meitaki Ma'ata*
- *Tubewa*
- *Fakaaue lahi*



Click [here](#) to download the video presentation of Prof. Elisabeth Holland





Ms. Siosinamele Lui

Climate Traditional Knowledge Officer,
Secretariat of the Pacific Regional Environment
Programme (SPREP)

- Ms Siosinamele Lui is a **Climate Resilience and Disaster Risk Reduction specialist and specializes in impacts, resilience and adaptation to climate variability and change in the Pacific.**

- She is an **expert on the use of traditional knowledge in weather and climate forecasting**, and responses and has been working in the Pacific for more than fifteen years. As current lead on the Climate Traditional Knowledge Component for the Climate and Oceans Support Program in the Pacific (COSPPac) Project, **she coordinates and supports national meteorological services in Niue, Vanuatu, Tonga, Samoa, Solomon Islands, Palau and Marshall Islands** by providing technical support on methodologies and ways to integrate climate traditional knowledge as a valid source of information to be included in national early warning systems. She is based at the Secretariat of the Pacific Regional Environment Programme (SPREP) in Apia. Samoa.

- She holds a **Master's Degree in Environmental Management and Development** from the Australian National University as well as a Bachelor's Degree in Geography and Tourism from the University of the South Pacific, Fiji.



INTRA-ACP GCCA+ Programme

Climate resilience for ACP countries



SPREP
Secretariat of the Pacific Regional
Environment Programme



Climate and Oceans Support
Program in the Pacific



**PACIFIC
METEOROLOGICAL
COUNCIL**

Traditional Knowledge of weather and climate

Building Community Resilience in Pacific communities

Siosinamele Lui

Climate Traditional Knowledge Officer

SPREP



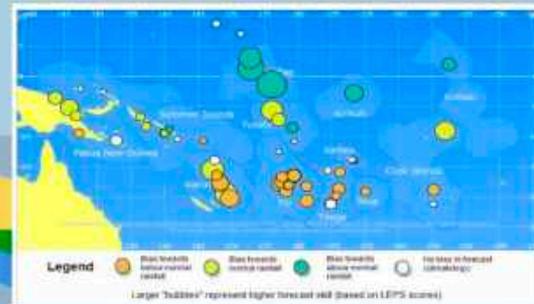


Traditional Knowledge for Forecasting

- Traditional knowledge (TK) widely used and is strong in Pacific communities
- Concern about knowledge loss – community vulnerability
- Concern over community up-take of Seasonal Climate Outlook (SCO) information
- Adding TK increases relevance and value of forecasting products to communities
- Traditional climate and weather knowledge bridges gaps –local scale



RE
of the Pacific R
Programme



Traditional Knowledge Process

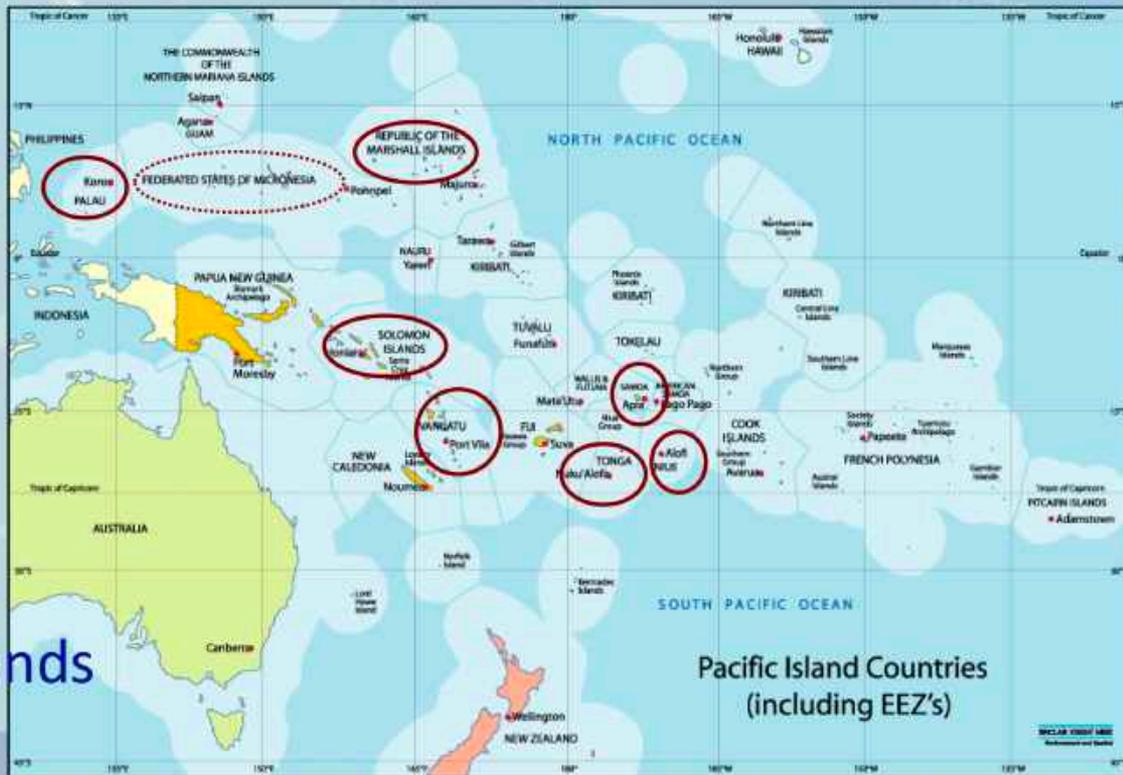
- National consultations
- Surveys and Interviews
- Monitoring of indicators
- Verification
 - Verification of TK forecasts
 - Publications





Countries

- Vanuatu
- Solomon Islands
- Niue
- Samoa
- Tonga
- Palau
- Republic of Marshall Islands
- * FSM





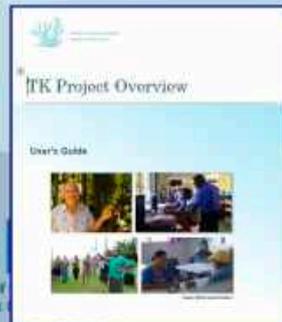
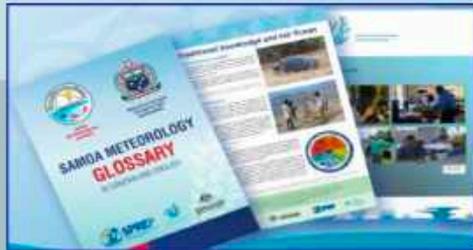
Types of Traditional weather and climate knowledge

| Object | Action | When to look | Indicator Seen? | When ? | Climate Outcome | When expected | Outcome Observed ? | When? |
|---------|-------------------------------------|--------------|-----------------|--------|--|---------------------|--------------------|----------|
| Turtles | Nesting higher up in the sand dunes | Aug-Sep- Oct | Yes | Sep | Wet season will be a very active season | November to March | | |
| Malio | Burrowing in numbers | October | No | - | Storm will occur within weeks of observation | October to November | Yes | November |



Use of Traditional Knowledge

- Early Warning System
- Terminology
- Translation of Technical and scientific terms to local language



| Wind Speed (mph) | Wind Speed (km/h) | Local Term | Description |
|------------------|-------------------|-----------------|--------------|
| 0-5 | 0-8 | Mo'e Fakataitai | Light breeze |
| 6-10 | 10-16 | Mo'e Fakataitai | Light breeze |
| 11-15 | 18-24 | Mo'e Fakataitai | Light breeze |
| 16-20 | 26-32 | Mo'e Fakataitai | Light breeze |
| 21-25 | 34-40 | Mo'e Fakataitai | Light breeze |
| 26-30 | 42-48 | Mo'e Fakataitai | Light breeze |
| 31-35 | 50-56 | Mo'e Fakataitai | Light breeze |
| 36-40 | 58-64 | Mo'e Fakataitai | Light breeze |
| 41-45 | 66-72 | Mo'e Fakataitai | Light breeze |
| 46-50 | 74-80 | Mo'e Fakataitai | Light breeze |
| 51-55 | 82-88 | Mo'e Fakataitai | Light breeze |
| 56-60 | 90-96 | Mo'e Fakataitai | Light breeze |
| 61-65 | 98-104 | Mo'e Fakataitai | Light breeze |
| 66-70 | 106-112 | Mo'e Fakataitai | Light breeze |
| 71-75 | 114-120 | Mo'e Fakataitai | Light breeze |
| 76-80 | 122-128 | Mo'e Fakataitai | Light breeze |
| 81-85 | 130-136 | Mo'e Fakataitai | Light breeze |
| 86-90 | 138-144 | Mo'e Fakataitai | Light breeze |
| 91-95 | 146-152 | Mo'e Fakataitai | Light breeze |
| 96-100 | 154-160 | Mo'e Fakataitai | Light breeze |
| 101-105 | 162-168 | Mo'e Fakataitai | Light breeze |
| 106-110 | 170-176 | Mo'e Fakataitai | Light breeze |
| 111-115 | 178-184 | Mo'e Fakataitai | Light breeze |
| 116-120 | 186-192 | Mo'e Fakataitai | Light breeze |
| 121-125 | 194-200 | Mo'e Fakataitai | Light breeze |
| 126-130 | 202-208 | Mo'e Fakataitai | Light breeze |
| 131-135 | 210-216 | Mo'e Fakataitai | Light breeze |
| 136-140 | 222-228 | Mo'e Fakataitai | Light breeze |
| 141-145 | 230-236 | Mo'e Fakataitai | Light breeze |
| 146-150 | 238-244 | Mo'e Fakataitai | Light breeze |
| 151-155 | 246-252 | Mo'e Fakataitai | Light breeze |
| 156-160 | 254-260 | Mo'e Fakataitai | Light breeze |
| 161-165 | 262-268 | Mo'e Fakataitai | Light breeze |
| 166-170 | 270-276 | Mo'e Fakataitai | Light breeze |
| 171-175 | 282-288 | Mo'e Fakataitai | Light breeze |
| 176-180 | 290-296 | Mo'e Fakataitai | Light breeze |
| 181-185 | 302-308 | Mo'e Fakataitai | Light breeze |
| 186-190 | 310-316 | Mo'e Fakataitai | Light breeze |
| 191-195 | 318-324 | Mo'e Fakataitai | Light breeze |
| 196-200 | 322-328 | Mo'e Fakataitai | Light breeze |
| 201-205 | 330-336 | Mo'e Fakataitai | Light breeze |
| 206-210 | 338-344 | Mo'e Fakataitai | Light breeze |
| 211-215 | 346-352 | Mo'e Fakataitai | Light breeze |
| 216-220 | 354-360 | Mo'e Fakataitai | Light breeze |
| 221-225 | 362-368 | Mo'e Fakataitai | Light breeze |
| 226-230 | 370-376 | Mo'e Fakataitai | Light breeze |
| 231-235 | 378-384 | Mo'e Fakataitai | Light breeze |
| 236-240 | 382-388 | Mo'e Fakataitai | Light breeze |
| 241-245 | 390-396 | Mo'e Fakataitai | Light breeze |
| 246-250 | 394-400 | Mo'e Fakataitai | Light breeze |
| 251-255 | 402-408 | Mo'e Fakataitai | Light breeze |
| 256-260 | 410-416 | Mo'e Fakataitai | Light breeze |
| 261-265 | 418-424 | Mo'e Fakataitai | Light breeze |
| 266-270 | 422-428 | Mo'e Fakataitai | Light breeze |
| 271-275 | 430-436 | Mo'e Fakataitai | Light breeze |
| 276-280 | 438-444 | Mo'e Fakataitai | Light breeze |
| 281-285 | 446-452 | Mo'e Fakataitai | Light breeze |
| 286-290 | 454-460 | Mo'e Fakataitai | Light breeze |
| 291-295 | 462-468 | Mo'e Fakataitai | Light breeze |
| 296-300 | 470-476 | Mo'e Fakataitai | Light breeze |
| 301-305 | 478-484 | Mo'e Fakataitai | Light breeze |
| 306-310 | 482-488 | Mo'e Fakataitai | Light breeze |
| 311-315 | 490-496 | Mo'e Fakataitai | Light breeze |
| 316-320 | 494-500 | Mo'e Fakataitai | Light breeze |
| 321-325 | 502-508 | Mo'e Fakataitai | Light breeze |
| 326-330 | 510-516 | Mo'e Fakataitai | Light breeze |
| 331-335 | 518-524 | Mo'e Fakataitai | Light breeze |
| 336-340 | 522-528 | Mo'e Fakataitai | Light breeze |
| 341-345 | 530-536 | Mo'e Fakataitai | Light breeze |
| 346-350 | 538-544 | Mo'e Fakataitai | Light breeze |
| 351-355 | 546-552 | Mo'e Fakataitai | Light breeze |
| 356-360 | 554-560 | Mo'e Fakataitai | Light breeze |
| 361-365 | 562-568 | Mo'e Fakataitai | Light breeze |
| 366-370 | 570-576 | Mo'e Fakataitai | Light breeze |
| 371-375 | 578-584 | Mo'e Fakataitai | Light breeze |
| 376-380 | 582-588 | Mo'e Fakataitai | Light breeze |
| 381-385 | 590-596 | Mo'e Fakataitai | Light breeze |
| 386-390 | 594-600 | Mo'e Fakataitai | Light breeze |
| 391-395 | 602-608 | Mo'e Fakataitai | Light breeze |
| 396-400 | 610-616 | Mo'e Fakataitai | Light breeze |
| 401-405 | 618-624 | Mo'e Fakataitai | Light breeze |
| 406-410 | 622-628 | Mo'e Fakataitai | Light breeze |
| 411-415 | 630-636 | Mo'e Fakataitai | Light breeze |
| 416-420 | 638-644 | Mo'e Fakataitai | Light breeze |
| 421-425 | 646-652 | Mo'e Fakataitai | Light breeze |
| 426-430 | 654-660 | Mo'e Fakataitai | Light breeze |
| 431-435 | 662-668 | Mo'e Fakataitai | Light breeze |
| 436-440 | 670-676 | Mo'e Fakataitai | Light breeze |
| 441-445 | 678-684 | Mo'e Fakataitai | Light breeze |
| 446-450 | 682-688 | Mo'e Fakataitai | Light breeze |
| 451-455 | 690-696 | Mo'e Fakataitai | Light breeze |
| 456-460 | 694-700 | Mo'e Fakataitai | Light breeze |
| 461-465 | 702-708 | Mo'e Fakataitai | Light breeze |
| 466-470 | 710-716 | Mo'e Fakataitai | Light breeze |
| 471-475 | 718-724 | Mo'e Fakataitai | Light breeze |
| 476-480 | 722-728 | Mo'e Fakataitai | Light breeze |
| 481-485 | 730-736 | Mo'e Fakataitai | Light breeze |
| 486-490 | 738-744 | Mo'e Fakataitai | Light breeze |
| 491-495 | 746-752 | Mo'e Fakataitai | Light breeze |
| 496-500 | 754-760 | Mo'e Fakataitai | Light breeze |
| 501-505 | 762-768 | Mo'e Fakataitai | Light breeze |
| 506-510 | 770-776 | Mo'e Fakataitai | Light breeze |
| 511-515 | 778-784 | Mo'e Fakataitai | Light breeze |
| 516-520 | 782-788 | Mo'e Fakataitai | Light breeze |
| 521-525 | 790-796 | Mo'e Fakataitai | Light breeze |
| 526-530 | 794-800 | Mo'e Fakataitai | Light breeze |
| 531-535 | 802-808 | Mo'e Fakataitai | Light breeze |
| 536-540 | 810-816 | Mo'e Fakataitai | Light breeze |
| 541-545 | 818-824 | Mo'e Fakataitai | Light breeze |
| 546-550 | 822-828 | Mo'e Fakataitai | Light breeze |
| 551-555 | 830-836 | Mo'e Fakataitai | Light breeze |
| 556-560 | 838-844 | Mo'e Fakataitai | Light breeze |
| 561-565 | 846-852 | Mo'e Fakataitai | Light breeze |
| 566-570 | 854-860 | Mo'e Fakataitai | Light breeze |
| 571-575 | 862-868 | Mo'e Fakataitai | Light breeze |
| 576-580 | 870-876 | Mo'e Fakataitai | Light breeze |
| 581-585 | 878-884 | Mo'e Fakataitai | Light breeze |
| 586-590 | 882-888 | Mo'e Fakataitai | Light breeze |
| 591-595 | 890-896 | Mo'e Fakataitai | Light breeze |
| 596-600 | 894-900 | Mo'e Fakataitai | Light breeze |
| 601-605 | 902-908 | Mo'e Fakataitai | Light breeze |
| 606-610 | 910-916 | Mo'e Fakataitai | Light breeze |
| 611-615 | 918-924 | Mo'e Fakataitai | Light breeze |
| 616-620 | 922-928 | Mo'e Fakataitai | Light breeze |
| 621-625 | 930-936 | Mo'e Fakataitai | Light breeze |
| 626-630 | 938-944 | Mo'e Fakataitai | Light breeze |
| 631-635 | 946-952 | Mo'e Fakataitai | Light breeze |
| 636-640 | 954-960 | Mo'e Fakataitai | Light breeze |
| 641-645 | 962-968 | Mo'e Fakataitai | Light breeze |
| 646-650 | 970-976 | Mo'e Fakataitai | Light breeze |
| 651-655 | 978-984 | Mo'e Fakataitai | Light breeze |
| 656-660 | 982-988 | Mo'e Fakataitai | Light breeze |
| 661-665 | 990-996 | Mo'e Fakataitai | Light breeze |
| 666-670 | 994-1000 | Mo'e Fakataitai | Light breeze |



Use of TK

- Integration of TK examples into Tropical Cyclone Forecast (Tonga & Vanuatu)
- Mainstream TK protocol into national policies and legislations e.g Niue, Tonga, Samoa (draft)

Tropical Cyclone Outlook updates

VMGD will continue to monitor the evolution of the climate system, if El Niño-Southern Oscillation conditions change over the coming months then the tropical cyclone outlook will be updated.

Note: Studies have shown that Traditional Knowledge (Local Knowledge) based on behaviour of certain Fauna (animals) and Flora (plants) can be used as indicator for immediate onset of developing or approaching tropical cyclone in some islands of Vanuatu.

REPORT by

Published on

For more information:

Esline Garaebiti, Director, Vanuatu Meteorology and Geo-hazards Department (VMGD)

Summary

The tropical cyclone (TC) activity expected in the 2018/19 Tropical Cyclone Season to affect Tonga is likely to be average to above average. This means that there is a 75% chance of at least 2 cyclones to occur during the cyclone season. And although historical records indicate there could be a low chance of severe tropical cyclones occurring this season, citizens are advised to expect the likelihood of at least 1 severe cyclone occurring due to climate variability brought about by global warming.

Any tropical cyclones passing close to the country, associated active cloud and rain bands may occasionally affect Tonga with marked rainfall and possible flooding, including sea flooding of low-lying coastal areas.

With the expectation of tropical cyclone formation (genesis) to lie east of the Dateline, there is high chance that any tropical cyclone affecting Tonga would approach from the Northwestern and Northern sector.

About 7 to 9 named Tropical Cyclones are expected for the South West Pacific in 2018/2019 season.

This is consistent with some pre-season traditional weather indicators e.g. moderate to heavy flowering and fruiting of breadfruit

Analysis and Outlook for Tonga



SPREP
Secretariat of the Pacific Regional
Environment Programme



Challenges and Successes

Successes

- Improves uptake of information
- Increases use of weather and climate information
- Informed decision making to better respond to extreme climate events
- Improves community engagement, communication and sharing of information
- Use of weather and climate information in policies and development plans

Challenges

- Rural vs Urban Communities
- Literacy Levels and gender needs
- Isolation and Communication challenges
- High language per capita
- Diverse cultures in small populations
- financial capacities to deliver climate services to communities
- Limited communication infrastructure



Thank you



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METEOROLOGICAL
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07. Community based forest management

Case studies in ACP countries and results

By Ms Marie-Ange Kalenga





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• **Marie-Ange Kalenga** joined **Fern** in 2014 where she works on forests and development issues with a focus on the Congo Basin. She is a development specialist and sociologist with 20 years' experience in the NGO and development sectors. She has lived in Northern Europe, Central, West, and North Africa, working extensively on natural resource governance including for Transparency International, the Extractives Industries Transparency Initiative, and the Publish What You Pay Coalition.





Community-based forest management: a solution for mitigating and adapting to climate change?

Overall benefits of community-based forest management

- ❑ Conservation of forest resources, including water sources or watersheds.
- ❑ Rehabilitation of degraded areas.
- ❑ Sustainable uses that can allow the harvesting of forest products for domestic use.
- ❑ Income-generating activities, such as logging and the sale of valuable timber or non-timber resources, or the promotion of eco-tourism.
- ❑ Payments for environmental services (PES), carbon storage.

Cameroon, Gabon, RC, CAR and DRC have all incorporated community forestry into their legislation.

Community-based forest management and REDD+

- REDD+ is an instrument that integrates three dimensions - ecological, social and commercial - involves the participation of a range of stakeholders including communities.
- Rural communities that use, manage and depend on forests can participate in the fight against deforestation and the reduction of carbon emissions through the quality and presence of forests.
- The majority of REDD + projects funded by UN REDD and the Carbon Fund refer to community forest management.
 - DRC: REDD+ strategy provides for FC; multiple projects that link PES, carbon credit and sustainable agriculture
 - Cameroon: some CF convert to conservation in order to obtain carbon credit
 - RCongo: REDD + pilot projects focused on sustainable cocoa-culture



Community forestry in NDCs

Central African Republic

- Civil society intends **to influence the forest policy development process and harmonizing** the community forestry legislation.
- Civil society has been allowed **to support the creation of community forests** and intends to contribute to the development of a legality grid on community forests.



Climate benefits of CBFM

- **Carbon emissions**
- **Carbon capture**
- **Climate resilience**



Recommendations

Policy making and law enforcement

Include CBFM as a climate mitigation and adaptation measure in NDCs.

Ensure policy coherence across sectors and clarify land tenure regimes.

Strengthen law enforcement and land and forest governance.

Promote new paradigm for community-based forest management (bottom up, focusing on sustainable & multiple uses).

Tailored support for communities

Inclusion of vulnerable groups in decision-making processes including indigenous peoples and women.

Adequate technical and financial support for communities.



Videos on CBFM in the Congo Basin:

www.fern.org

Resources on CBFM:

<https://loggingoff.info/fr/>

Thank you!



08. Open discussion

All participants



09. Wrap up and
Closing remarks
Moderation
By Dr. Pendo Maro



10. WEBINAR FEEDBACK SURVEY



Thank you!



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