Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

Program, transversalities WP2 and WP3

Dr Olivier Galy

Pr Jean-Marie Fotsing

Disclaimer: the views expressed in this presentation are purely those of the author and may not in any circumstances be regarded as stating an official position of the Research Executive Agency

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 873185

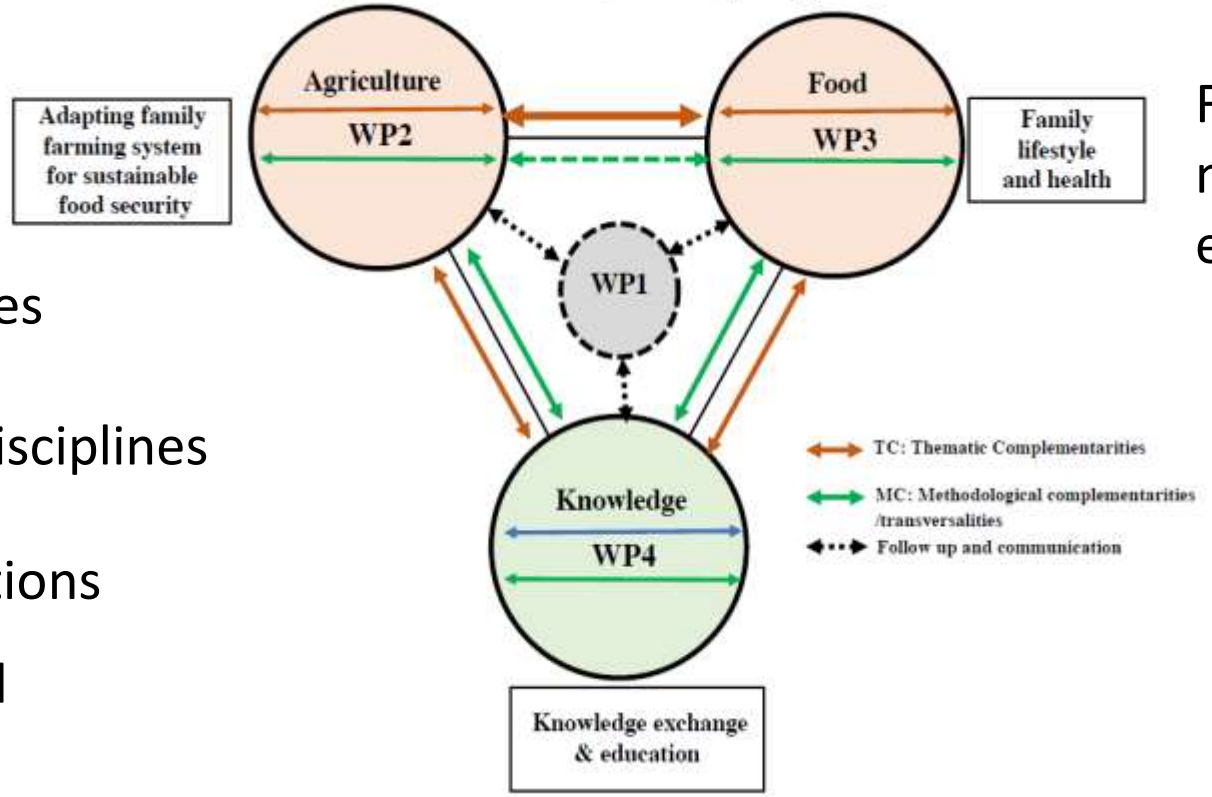
Research project
Scientific organisation (3 WPs)

WP2
From gardens to markets

- Multi-thematic approaches
- Comparative studies
- Involvement of several disciplines

⇒ Methodological innovations

⇒ Sharing Knowledge and experiences



WP2: Sharing knowledge, experiences and training

WP3
From gardens to markets…. to kitchens…. even to the hospital

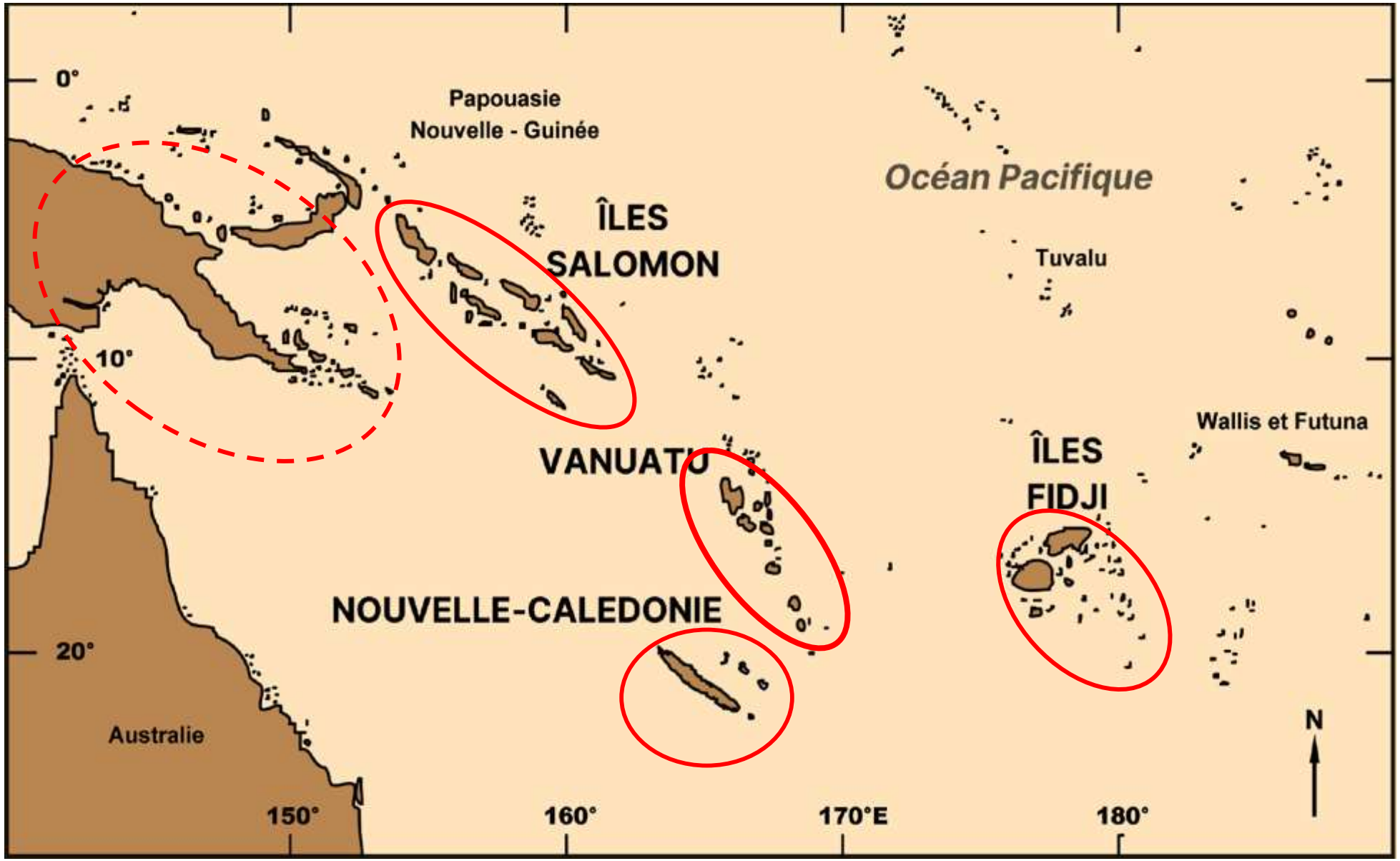
2 Th. WPs + 1 Kn. WP : 9 Research questions

Research project
Fields of application

4 PICT
NC (AC)
SI (TC)
Van (TC)
Fiji (TC)
PNG (TC)

Spatial comp.
Rural
Urban-PU
Coastal area

Social comp.
Children
Families
Commiunities…



Project implementation
secondments

Mobilities to and from VANUATU	2022	2023	2024	2025
Senior researchers and early carrier researchers hosted in Vanuatu	20	39	1	8
Outgoing mobilities for MOET and VARTC teams	21	17	11	9

Title: Program, importance of transversalities and spatialization

Tuesday 25th of October – afternoon (National University of Vanuatu)

Transversalities between WPs: methodological issues and pathways

Wednesday 26th of October - morning

(National University of Vanuatu)

Ideas and methods for building a collective, shared and relevant definition and issues of FF in the Pacific

Methods, timeline for research with Schools, communities, students

Wednesday 26th of October- afternoon

(National University of Vanuatu)

PhD Poster Session

Methodologies for understanding knowledge transmissions in agriculture, food habits & lifestyle

Dinner

Thursday 27th of October

Field trip start at UNV

Closure ceremony

Friday 28th of October- mornin (National University of Vanuatu)

Complimentary presentations: "Understanding lifestyle behaviours in the Pacific using human-centred artificial intelligence from activity sensors and nutrition digital tools"

Friday 28th of October- afternoon (National University of Vanuatu)

Additional PhD support

Australia workshop 21, 22 and 3 November in Sydney

FALAH Workshop co-hosted :

THE UNIVERSITY OF SYDNEY

WESTERN SYDNEY UNIVERSITY

Theme: Workshop Alimentation & Agriculture

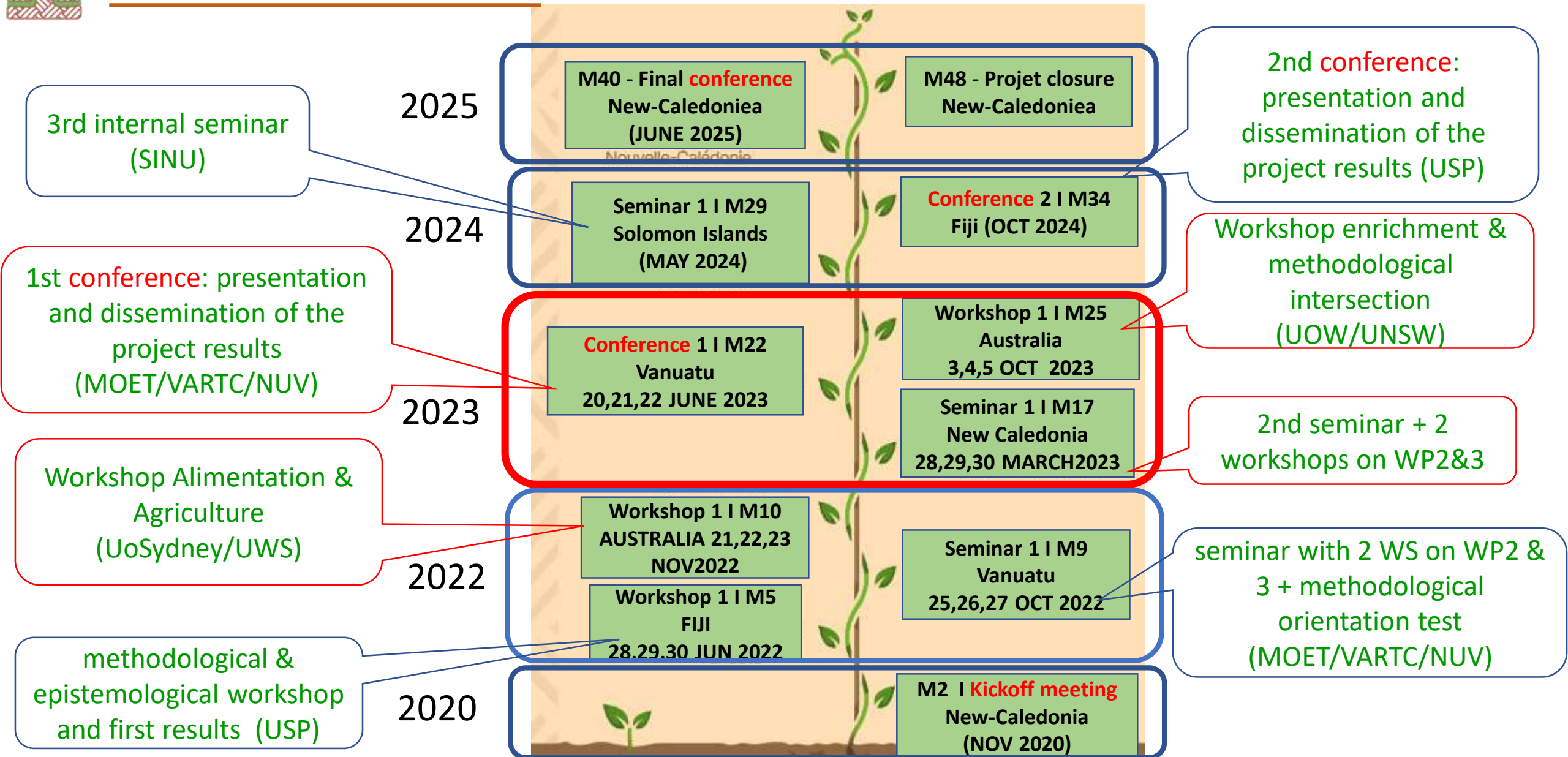
PRE-PROGRAM:

21 of November 2022: 17H, opening ceremony the at the Charles Perkins Centre

22, 23, 24 of November 2022: Workshop

Project implementation

Major scientific events 2023, 2024, 2025



3rd internal seminar (SINU)

2nd conference: presentation and dissemination of the project results (USP)

1st conference: presentation and dissemination of the project results (MOET/VARTC/NUV)

Workshop enrichment & methodological intersection (UOW/UNSW)

2nd seminar + 2 workshops on WP2&3

Workshop Alimentation & Agriculture (UoSydney/UWS)

seminar with 2 WS on WP2 & 3 + methodological orientation test (MOET/VARTC/NUV)

methodological & epistemological workshop and first results (USP)

FALAH

Agriculture familiale, mode de vie & santé

Merci pour votre attention

UNIVERSITÉ TOULOUSE Jean Jaurès

UMR 5175 CENTRE D'ÉCOLOGIE FONCTIONNELLE & EVOLUTIVE

LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

KULA e.V.

IRD Institut de Recherche pour le Développement FRANCE

HORIZON 2020

UNC UNIVERSITÉ de la NOUVELLE-CALÉDONIE

IAC INSTITUT AGRONOMIQUE NÉO-CALÉDONIEN

Pacific Community Communauté du Pacifique

SINU SOLOMON ISLANDS NATIONAL UNIVERSITY

CTRAVARTC

USP THE UNIVERSITY OF THE SOUTH PACIFIC

Ministry of Education & Training Government of Vanuatu

UNSW SYDNEY

UNIVERSITY OF WOLLONGONG AUSTRALIA

THE UNIVERSITY OF SYDNEY

WESTERN SYDNEY UNIVERSITY

Project implimentation
Enrichments & scientific links

Scientific links (Gateways/Bridges)

2020 ***Nutrition, health and food security in French Pacific communities****. Raubenheimer D (**USYD**), Galy O (UNC), Bouard S (IAC), Caillaud C (USYD), Fasi J (SINU), Iese V (USP), Metsan P (NUV).* ***24 000 €***

2020 ***Small scale agriculture, Lifestyle, and health in Papua New Guinea Families****. P Michon (**PNG**: Divine World University, Institute of Medical Research, University of Goroka), partners: Fiji and NC* ; **66 000 €**

2022 ***Understanding lifestyle behaviours in the Pacific using human-centred artificial intelligence from activity sensors and nutrition digital tools****. K Yacef (**USYD**), C Caillaud (USYD),O Galy (UNC), P Michon (NUV);* ***60 000 €***

2022: Caillaud USYD

2022: AUF

Methodological orientation test, methodological approaches and first results

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National University of Vanuatu, Port Vila

Family farming produces in farmers plots and diets: toward a meaning and relevant typology of each country studied (Fiji,Vanuatu, Solomon, New-Caledonia)?

Séverine Bouard (IAC)

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Objective of the presentation: improving our capacity to explore the Agriculture and Food Nexus

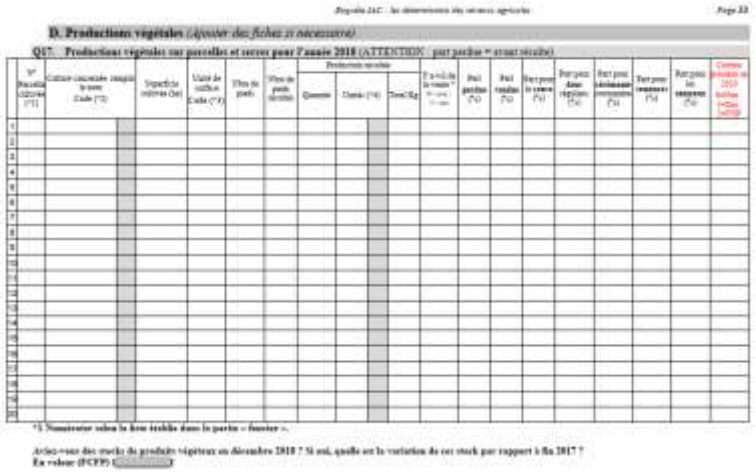
Create a link between Family farming practices and produces with diets, through our case studies

Articulating questionnaires/surveys

Family Farming and SRL

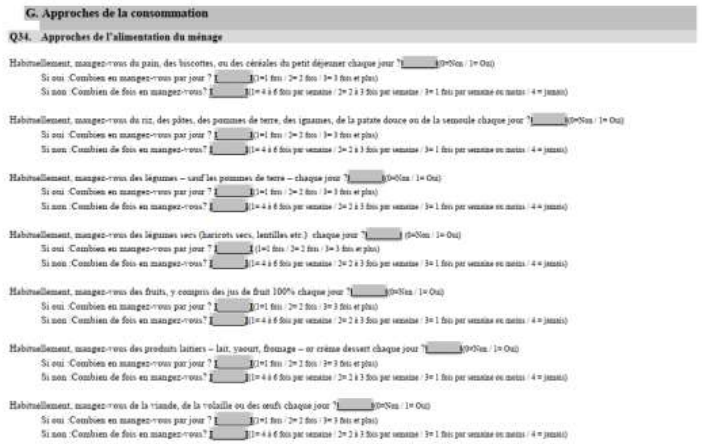
- Population/HH
  - Demography
  - Activities
- Productions
  - Crops
  - Livestock
  - Fishing
  - Hunting
- Functions of activities
  - Autoconsumption
  - Gifts & customs (kastom)
  - Sales
- Incomes

Household scale and plot scale



Member or household scale for FFQ, 24Recall

From farm to fork:
Challenge to connect the list of produces, and production to produces consumed, eaten (different scales, categories, classification)

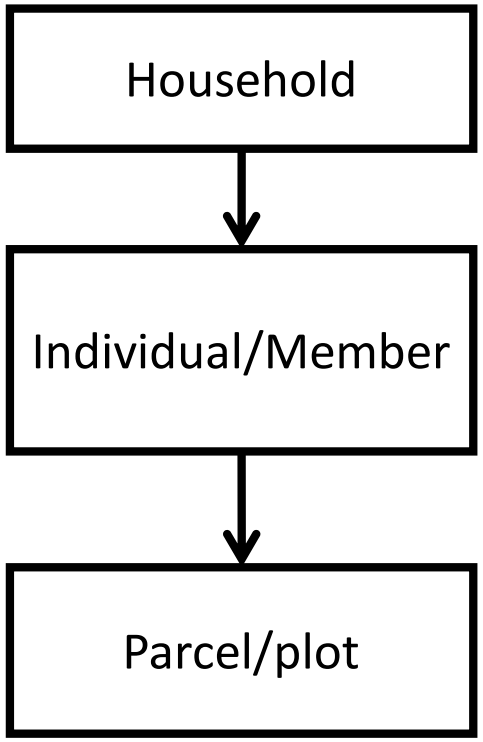


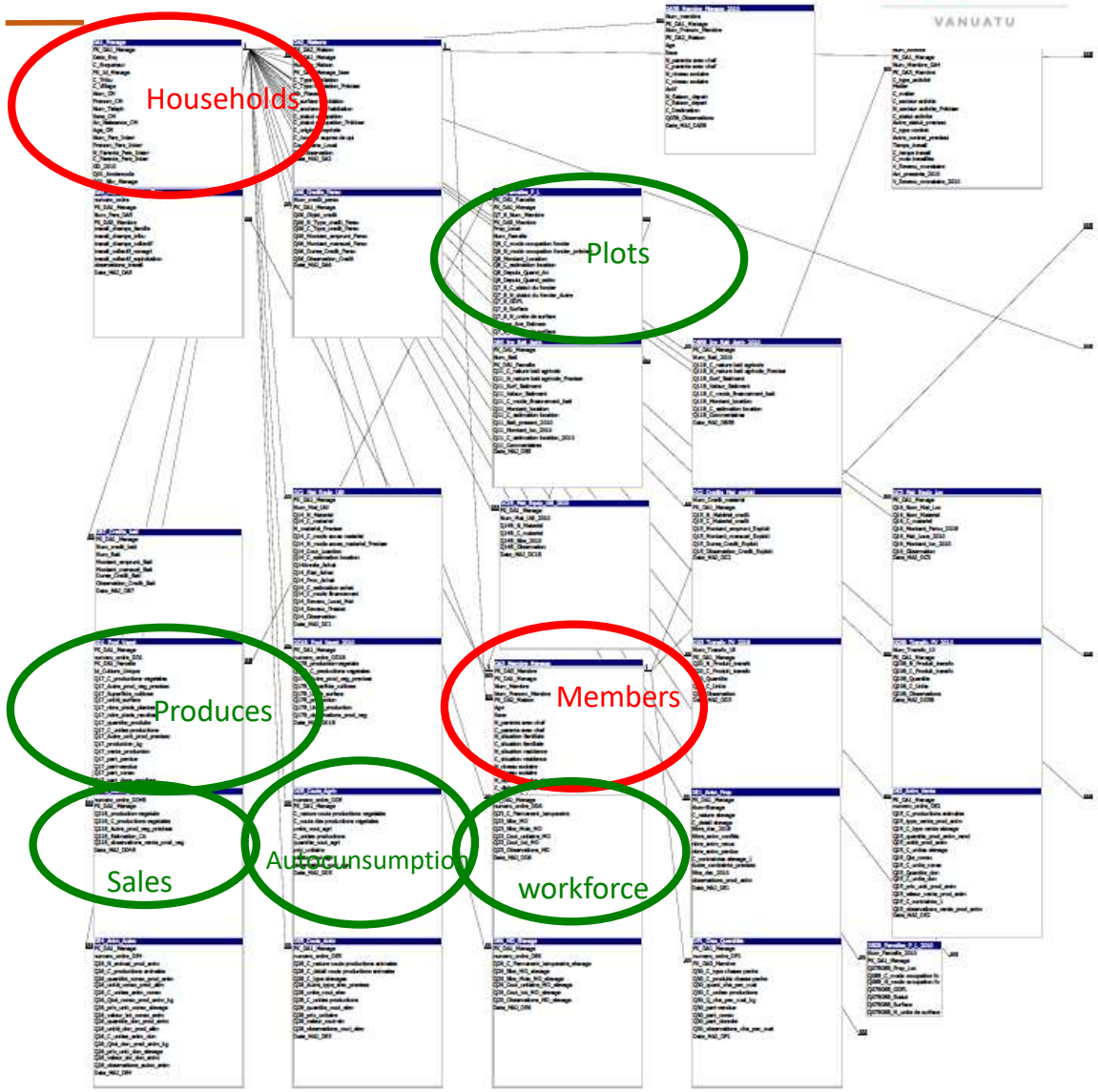
Main themes of Falah surveys

- Population
  - Demography
  - Activities
- Productions
  - Crops
  - Livestock
  - Fishing
  - Hunting
- Functions of activities
  - Autoconsumption
  - Gifts & customs (kastom)
  - Sales
- Incomes

Crédit photo : IAC

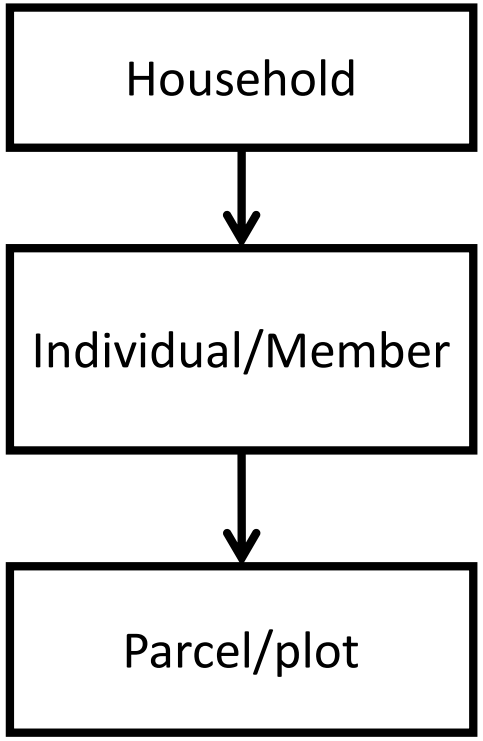
Population: the embeddedness of statistical units





A great diversity of species !!!

Population: the embeddedness of statistical units



A great diversity of species !!!

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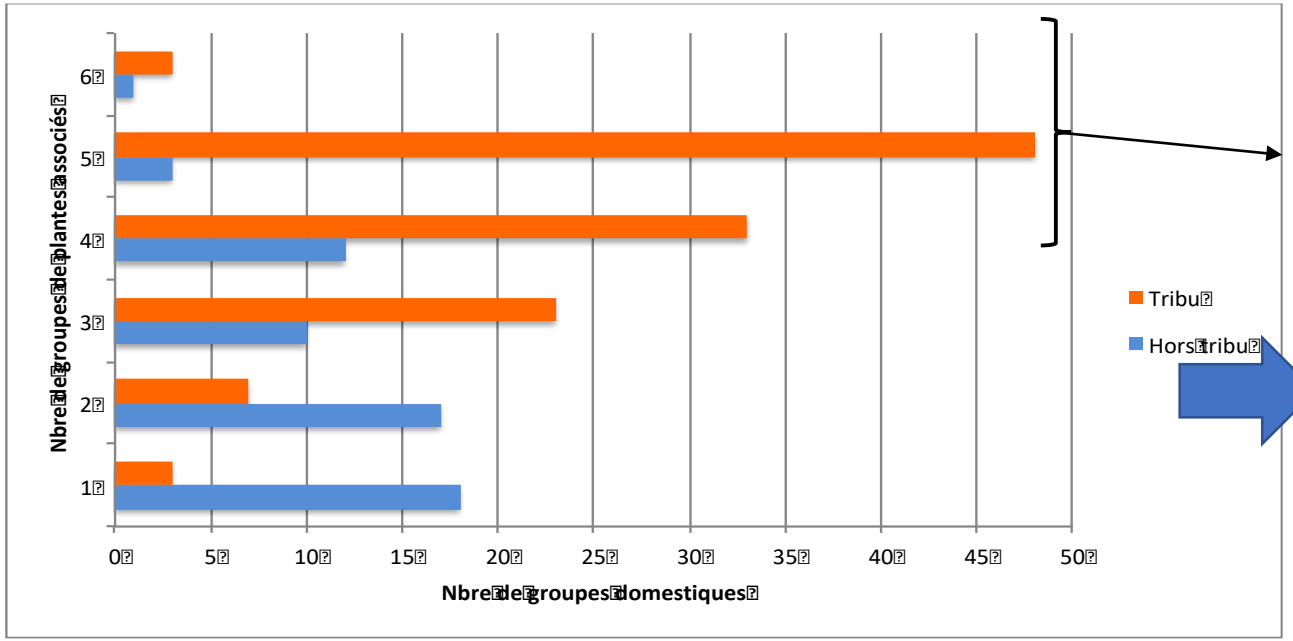
Diversity of produces

A great diversity of produces and species: few example from New Caledonia



Over 75 % of Kanak households in VKKP, combine more than 4 groups of plants
(tubers, bananas, fruits, fruits et légumes de plein champ, other productions, etc.)

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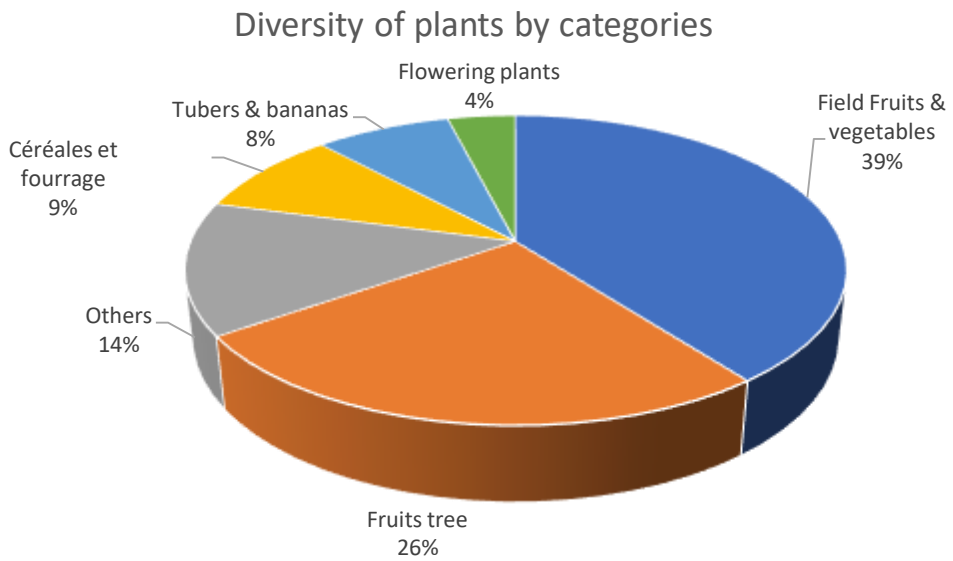
How to create an accurate liste of food plants?

The list for New-Caledonia

- Just with the most common we had listed up to 80 plants



- Rare plants and species, those from the wild

C_product	N_productions vegetale	C_group_prod vege	N_group_prod veget
1	Igname	1	Tubercule
2	Manioc	1	Tubercule
3	Patate douce	1	Tubercule
4	Taro d'eau	1	Tubercule
5	Taro de montagne	1	Tubercule
6	Autre tubercule (à préci	1	Tubercule
7	Banane dessert	2	Banane dessert
8	Banane poingo	3	Banane poingo
9	Blé	4	Céréales
10	Maïs	4	Céréales
11	Sorgho	4	Céréales
12	Autre céréale (à préciser	4	Céréales
13	Maïs fourrage/ensilage	5	Fourrage
14	Sorgho fourrager	5	Fourrage
15	Graminées	5	Fourrage
16	Légumineuses	5	Fourrage
17	Autre fourrage (à précis	5	Fourrage
18	Avocat	6	Arbre fruitiers
19	Carambole	6	Arbre fruitiers
20	Citron et lime	6	Arbre fruitiers
21	Cœur de bœuf	6	Arbre fruitiers
22	Combava	6	Arbre fruitiers
23	Corossol	6	Arbre fruitiers
25	Fruit à pain	6	Arbre fruitiers
26	Goyave	6	Arbre fruitiers
27	Jacques	6	Arbre fruitiers
30	Letchi	6	Arbre fruitiers
31	Mandarine	6	Arbre fruitiers
32	Mangue	6	Arbre fruitiers
33	Murier	6	Arbre fruitiers
34	Orange	6	Arbre fruitiers
35	Pamplemousse	6	Arbre fruitiers
36	Papaye	6	Arbre fruitiers
37	Pêche	6	Arbre fruitiers
38	Pomme canelle	6	Arbre fruitiers
39	Pomme citerne	6	Arbre fruitiers
40	Pomme kanak	6	Arbre fruitiers
41	Pomme rose	6	Arbre fruitiers
42	Jamelon	6	Arbre fruitiers
43	Cerise	6	Arbre fruitiers
44	Kaki	6	Arbre fruitiers
45	Tamarin	6	Arbre fruitiers
46	Autre fruits (à préciser)	6	Arbre fruitiers
47	Ambrevade	7	Fruits & Légumes plein champ
48	Ananas	7	Fruits & Légumes plein champ
49	Aubergine	7	Fruits & Légumes plein champ
50	Brède	7	Fruits & Légumes plein champ
51	Carotte	7	Fruits & Légumes plein champ
52	Céleri	7	Fruits & Légumes plein champ

Objective of the presentation: improving our capacity to explore the Agriculture and Food Nexus

- Population
  - Demography
  - Activities
- Productions
  - Crops
  - Livestock
  - Fishing
  - Hunting
- Functions of activities
  - Autoconsumption
  - Gifts & customs (kastom)
  - Sales
- Incomes

Crédit photo : IAC

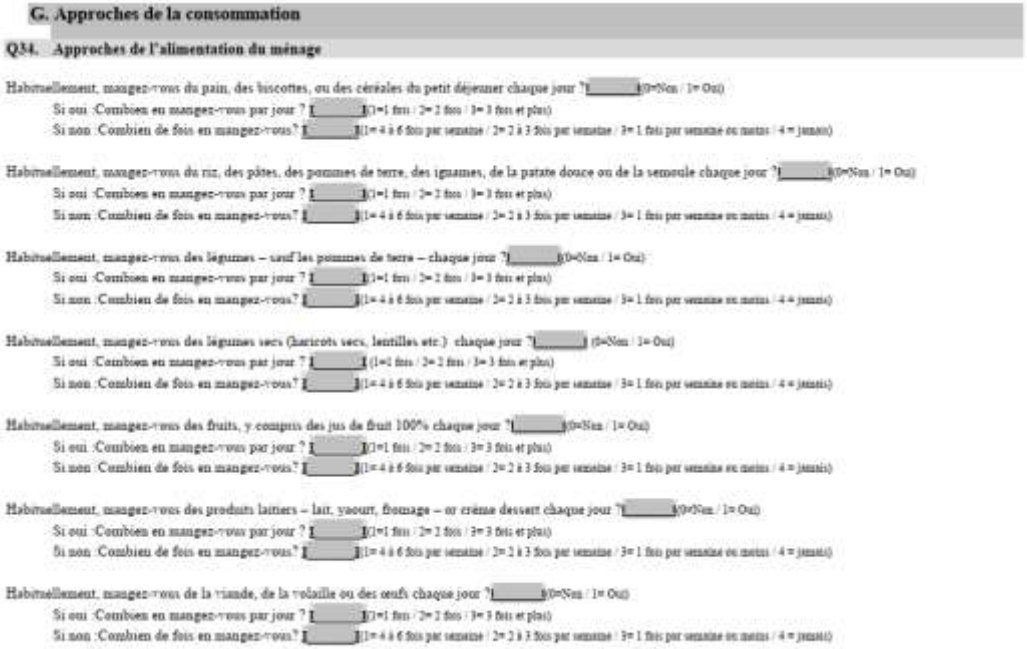
- **And to link with WP3: diet and nutrition questions (Dietary intake 24h recall or FFQ for each members)**

Objective of the presentation: improving our capacity to explore the Agriculture and Food nexus

- Dietary intake 24h recall or FFQ for each member of the households

→To understand food habits with FFQ

→ To Improve the analysis, with 24h-recall, with micro & macro-nutrients



G. Approches de la consommation

Q34. Approches de l'alimentation du ménage

Habituellement, mangez-vous du pain, des biscottes, ou des céréales du petit déjeuner chaque jour ? [_____] (0=Non / 1= Oui)
Si oui :Combien en mangez-vous par jour ? [_____] (1=1 fois / 2= 2 fois / 3= 3 fois et plus)
Si non :Combien de fois en mangez-vous? [_____] (1= 4 à 6 fois par semaine / 2= 2 à 3 fois par semaine / 3= 1 fois par semaine ou moins / 4 = jamais)

Habituellement, mangez-vous du riz, des pâtes, des pommes de terre, des igname, de la patate douce ou de la semoule chaque jour ? [_____] (0=Non / 1= Oui)
Si oui :Combien en mangez-vous par jour ? [_____] (1=1 fois / 2= 2 fois / 3= 3 fois et plus)
Si non :Combien de fois en mangez-vous? [_____] (1= 4 à 6 fois par semaine / 2= 2 à 3 fois par semaine / 3= 1 fois par semaine ou moins / 4 = jamais)

Habituellement, mangez-vous des légumes – sauf les pommes de terre – chaque jour ? [_____] (0=Non / 1= Oui)
Si oui :Combien en mangez-vous par jour ? [_____] (1=1 fois / 2= 2 fois / 3= 3 fois et plus)
Si non :Combien de fois en mangez-vous? [_____] (1= 4 à 6 fois par semaine / 2= 2 à 3 fois par semaine / 3= 1 fois par semaine ou moins / 4 = jamais)

Habituellement, mangez-vous des légumes secs (haricots secs, lentilles etc.) chaque jour ? [_____] (0=Non / 1= Oui)
Si oui :Combien en mangez-vous par jour ? [_____] (1=1 fois / 2= 2 fois / 3= 3 fois et plus)
Si non :Combien de fois en mangez-vous? [_____] (1= 4 à 6 fois par semaine / 2= 2 à 3 fois par semaine / 3= 1 fois par semaine ou moins / 4 = jamais)

Habituellement, mangez-vous des fruits, y compris des jus de fruit 100% chaque jour ? [_____] (0=Non / 1= Oui)
Si oui :Combien en mangez-vous par jour ? [_____] (1=1 fois / 2= 2 fois / 3= 3 fois et plus)
Si non :Combien de fois en mangez-vous? [_____] (1= 4 à 6 fois par semaine / 2= 2 à 3 fois par semaine / 3= 1 fois par semaine ou moins / 4 = jamais)

Habituellement, mangez-vous des produits laitiers – lait, yaourt, fromage – or crème dessert chaque jour ? [_____] (0=Non / 1= Oui)
Si oui :Combien en mangez-vous par jour ? [_____] (1=1 fois / 2= 2 fois / 3= 3 fois et plus)
Si non :Combien de fois en mangez-vous? [_____] (1= 4 à 6 fois par semaine / 2= 2 à 3 fois par semaine / 3= 1 fois par semaine ou moins / 4 = jamais)

Habituellement, mangez-vous de la viande, de la volaille ou des oeufs chaque jour ? [_____] (0=Non / 1= Oui)
Si oui :Combien en mangez-vous par jour ? [_____] (1=1 fois / 2= 2 fois / 3= 3 fois et plus)
Si non :Combien de fois en mangez-vous? [_____] (1= 4 à 6 fois par semaine / 2= 2 à 3 fois par semaine / 3= 1 fois par semaine ou moins / 4 = jamais)

Objective of the presentation: improving our capacity to explore the nexus Agriculture and Food

- Dietary intake 24h recall or FFQ for each member of the households

→To understand food habits with FFQ

→ To Improve the analysis, with Dietary intake 24h-recall, with micro & macro-nutrients

- And then, different food classifications:

The FAO HDDI « Household dietary diversity index », 12 categories

HDDI	
	cereals,
	roots and tubers
	vegetables and fruits
	meat from ruminants
	poultry meat and eggs
	fish and sea foods
	legumes, nuts and seeds
	milk and milk products
	oils and fat
	sugar / honey
	condiments,
	beverages

Objective of the presentation: improving our capacity to explore the nexus Agriculture and Food

- 24h recall or FFQ for each member of the households

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- And then, different food classifications:

The FAO HDDI “Household dietary diversity index« , 12 categories

The Food Frequency adapted to communities, 10 categories, adapted to local context : Gwynn 2012 (Aboriginal diets), others approaches (women, etc.)

Food Frequency Gwynn et al.	Cereals [unit/week]
	Vegetables and legumes [unit/week]
	Fruits [unit/week]
	Dairy [unit/week]
	Fats, oils [unit/week]
	Meat, fish, poultry and eggs [unit/week]
	Extras [unit/week]
	Others [unit/week]
	Water [unit/week]
	SSB [unit/week]

Objective of the presentation: improving our capacity to explore the Agriculture and Food nexus

- 24h recall or FFQ for each member of the households

→To understand food habits with FFQ

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- And then, different food classifications :

The FAO HDDI « Household dietary diversity index » , 12

categories

The Food Frequency adapted to communities, 10 categories

The Food Frequency and food classificiation proposed by the

SPC

.

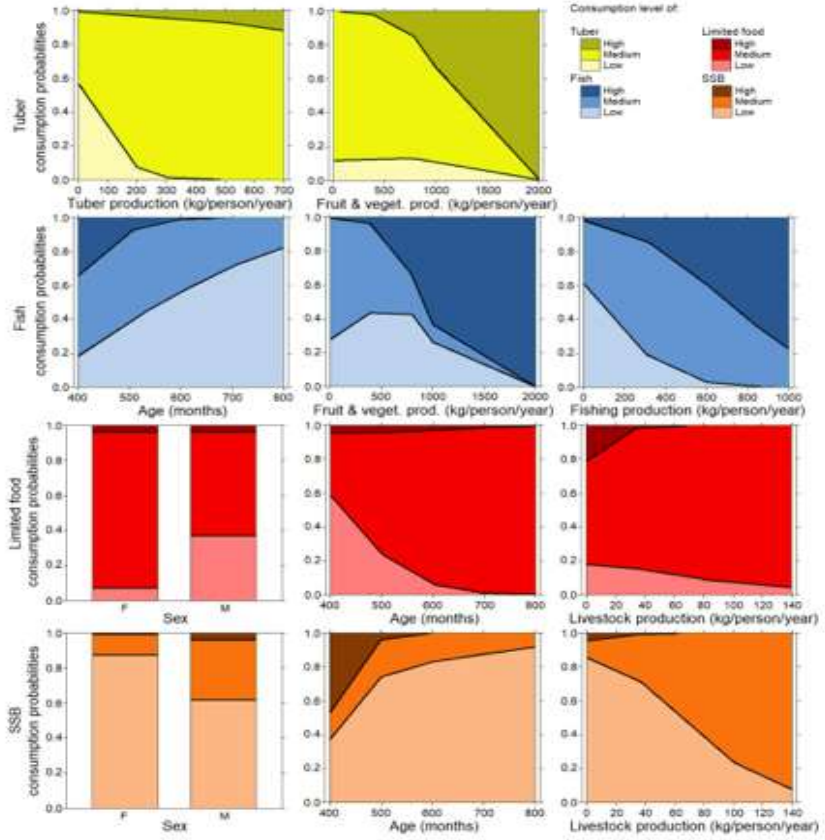
Food Frequency CPS	Energy group [unit/day]
	Protective group [unit/day]
	Body building group [unit/day]
	Limited foods [unit/day]
	Limited beverages [unit/day]
	Water [unit/day]

Objective of the presentation: improving our capacity to explore the Agriculture and Food Nexus

What kind of analysis:

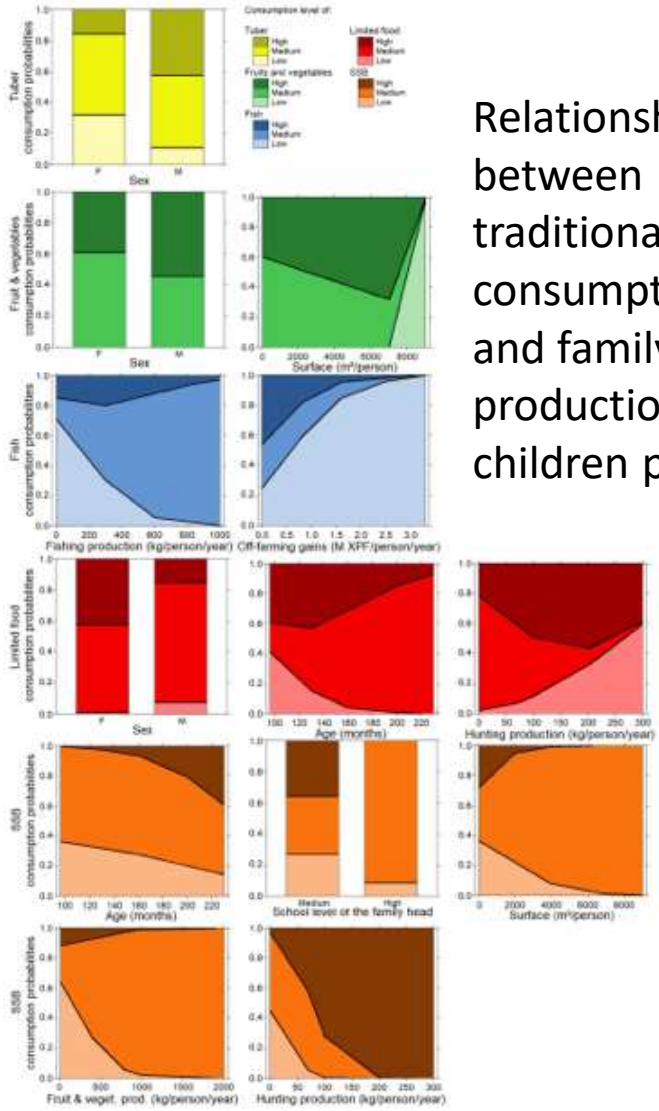
- Crossing the data through multivariate analysis

Relationships between traditional food consumption and family production in adults



Multinominal analysis consumption of tubers (yellow color), fish (blue color), and limited drinks: sugar- sweetened beverages (SSB) (orange color) and limited foods (red color) explained by agricultural variables (surface production, tuber production, weighted fish, off-farm gains), socioeconomic variables, sex, and age

Example of the study of Lifou (Galy, et al. 2012)



Relationships between traditional food consumption and family production in children population

Objective of the presentation: improving our capacity to explore the Agriculture and Food Nexus

What kind of analysis:

- Crossing the data through multivariate analysis

- Scoring perspectives, to synthesis the family farming activity to test correlation with food habits

  - **an index of diversity of production (IDP) based on food groups**

  The production from the primary sector (agriculture, fisheries and livestock) is separated into 5 food groups: Vegetables, Tubers, Fruits, Meat (and eggs) and Fish, with access or not to the food group through production/harvesting scored as 0 (for no) or 1 (for yes)

  IDP = ∑ of these values.

  - **an index of diversity of production based on the value of production**

  The second approach also separates production into five food groups, but takes into account the total value (market and non-market) of production..

  A total value of production is thus estimated for the household, as well as the share of each production in the total value.

  It is from these shares that Simpson's diversity index is calculated. $IDP = 1 - \sum_{i=1}^{n} {S_i}^2$

Conclusion

- Exploring the correlation between family farming is complex

- In the Pacific, populations often cultivate a lot of diversity but within the same group of food plants (tubers), households often produce the same things, so the determinants of diets are not necessarily in the field, it can be linked to the social capital/asset (Gaillard, bouard et al., Forthcoming), human capital/asset, income (diversification through markets and shops, as in Wallis & Futuna (Bouard et al. 2021)

- The need for a very complete list of plants → the excel sheet with the diversity of plant

Plant list FALAH

- What place for a complementary approaches/concept as « Food environments »? (Bogard & al., 2021)

Figure 1. Conceptual typology of food environments in the Pacific Region and primary exchange mechanisms.

- Difference between rural and urban SI households
- Complementary approach with national statistical data
- Place of markets

Objective of the presentation: improving our capacity to explore the Agriculture and Food Nexus

➔ A FALAH Delivrable due in February 2023: Bibliography on food plants and typology of diets

➔ A report in 6 sections

1. Bibliography and list on main food plants for each country based on previous studies in New Caledonia, researches led in Vanuatu,
2. Diets and Family farming in New Caledonia: perspectives from VKPP and Lifou
3. Diets and Family farming in Vanuatu
4. Diets and Family farming in Fiji
5. Diets and Family farming in Salomon Islands
6. Synthesis and first typology, research perspectives

Objective of the presentation: improving our capacity to explore the nexus Agriculture and Food

Create a link between Family farming practices and produces with diets

Extrait de la Base de Données sur ACCESS :

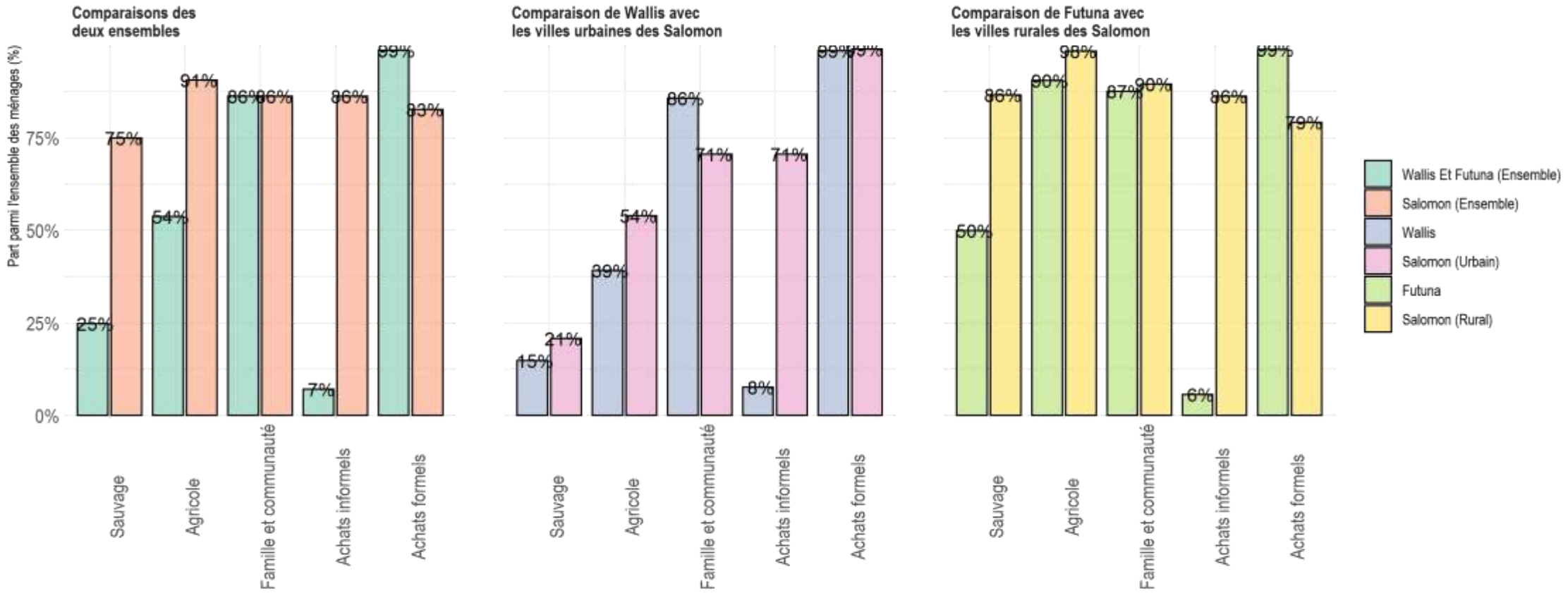
- La base est articulée autour de la table ménage
- Chaque table correspond à une thématique

- 46 tables actives et 100 tables paramètres (nomenclatures)

Objective of the presentation: improving our capacity to explore the nexus Agriculture and Food

Comparaisons des environnements alimentaires de Wallis et Futuna avec les îles Salomon*

**Données HIES 2013*



Source : Bogard, J.R.; Andrew, N.L.; Farrell, P.; Herrero, M.; Sharp, M.K.; Tutuo, J. A Typology of Food Environments in the Pacific Region and Their Relationship to Diet Quality in Solomon Islands. *Foods* **2021**, *10*, 2592. https://doi.org/10.3390/foods10112592

Objective of the presentation: improving our capacity to explore the nexus Agriculture and Food

The place for edible native/local plants with good appreciation for people?

Research projet of Dr. Nadia Robert (Physiologist,IAC)

33 species are still consumed including brède, figuette, island cabbage, purslane, soda, arroche, bird's nest fern, "pomme liane caillou"/wild passionfruit...

The importance for beeing ready to catch these plants duraing interviews if they are cited by households…

Dioscorea bulbifera

Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

Family farming and food supply to main markets in Santo, Vanuatu

Felicity Nilwo Rogers

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Title: Family farming and food supply to main markets in Santo, Vanuatu

Sub Title: Context

Agriculture practices in Vanuatu

- Vanuatu has a high agronomic potential with large area of fertile and arable land.
- Copra, coconuts, cocoa, coffee, taro, yams, fruits, vegetables, beef, fish are of market value.
- 76% of Vanuatu population live in rural area.
- 98% of rural households are engaged in agriculture.
- Agriculture accounts for 27% to Vanuatu's GDP (2017 est.)
- 65% of the labor force work in the agriculture sector.
- 16.9% of subsistence household income is from agriculture (2007 agriculture census).

Links to FALAH research questions

WP2: 2.1 Gather and summarize knowledge on cropping practices, consumption, innovation and the dynamics of family farming

WP3: 3.1 Examine the effects of family farming on lifestyle and its impact on the health and well-being

Title: Family farming and food supply to main markets in Santo, Vanuatu

Sub Title: Cultivated plants

Households engaged in growing selected vegetables (%)		
Crops	**Santo**	**National**
Manioc/ cassava	83.0	81.4
Banana	83.8	81.7
Island cabbage	79.9	78.3
Pawpaw	72.3	69.4
Fiji taro	58.8	57.2
Yam	67.1	59.8
Kumala	60.5	59.3
Island/water taro	44.0	45.7
Corn	52.3	55.1
Peanut	24.6	18.7
Rice	0.4	0.3

Figure 1: Most cultivated crops
Source: 2016 mini-census

Title: Family farming and food supply to main markets in Santo, Vanuatu

Sub Title: Agronomic potential and crop production

Fig. 2 The agronomic potential in Santo

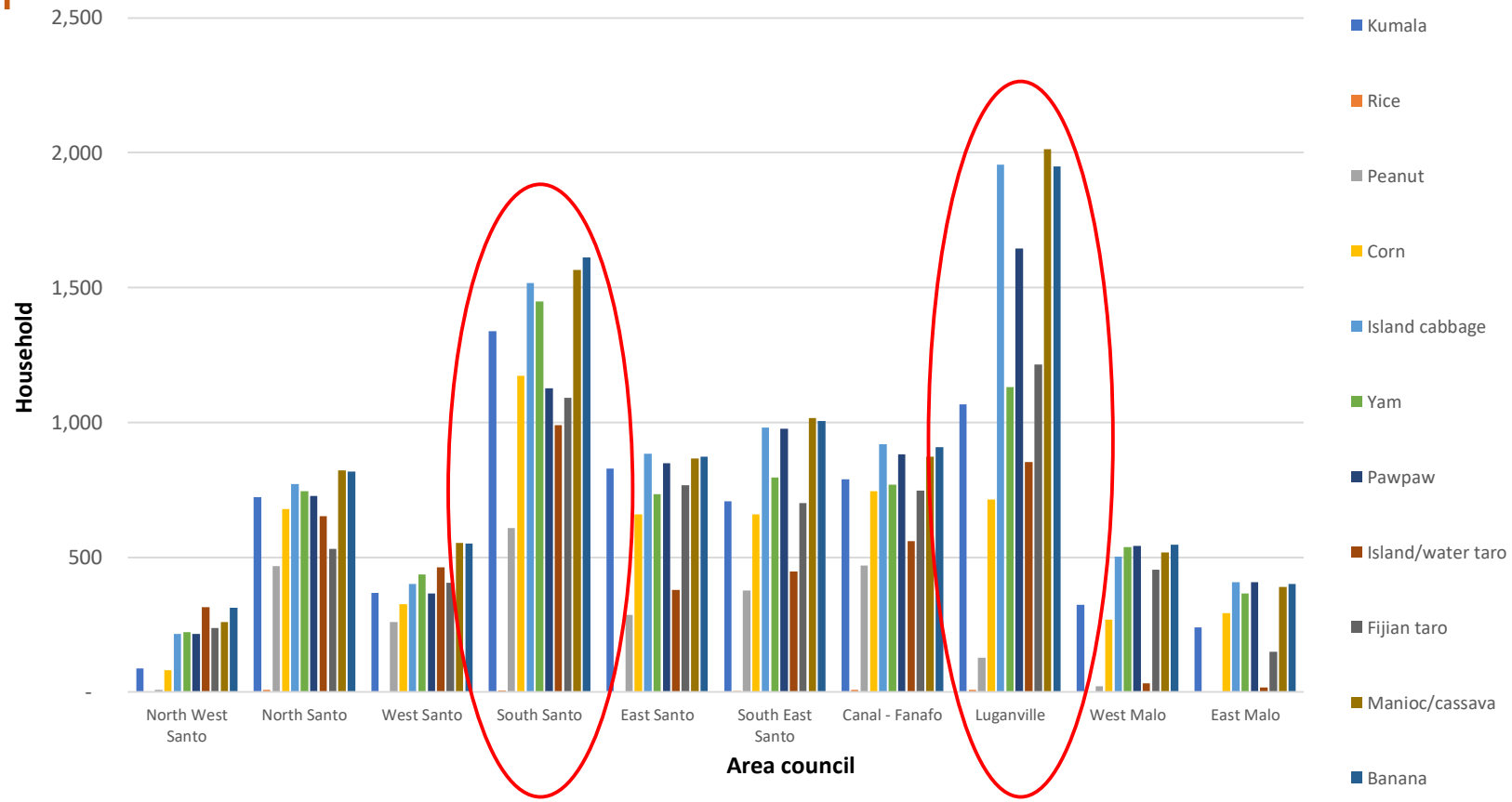


Fig. 3 Sanma households growing selected vegetables per region
Source: Vanuatu National Statistics Office

Title: Family farming and food supply to main markets in Santo, Vanuatu

Sub Title: Luganville main market and crop sellers

Source: Google Earth Pro, 2017

The Luganville main market is located in the Luganville municipal boundary and hosts sellers from all around Sanma province. A schedule of market day as been set up by the Luganville market management to facilitate market access from all area councils in Sanma and avoid overcrowding of the facility.

Title: Family farming and food supply to main markets in Santo, Vanuatu

Sub Title: Luganville main market and crop sellers

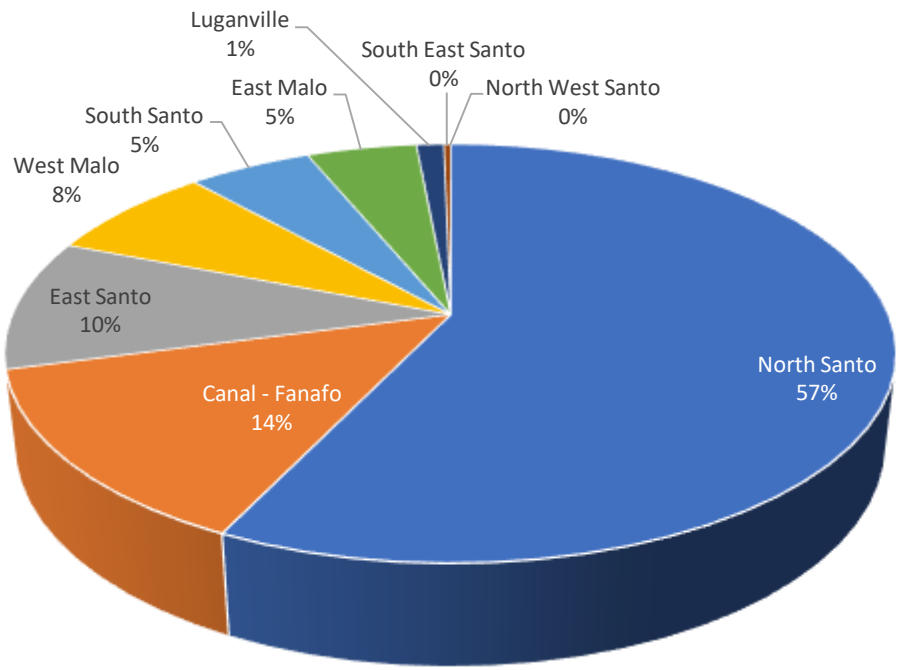


Fig. 4 Number of sellers at the main market in Luganville

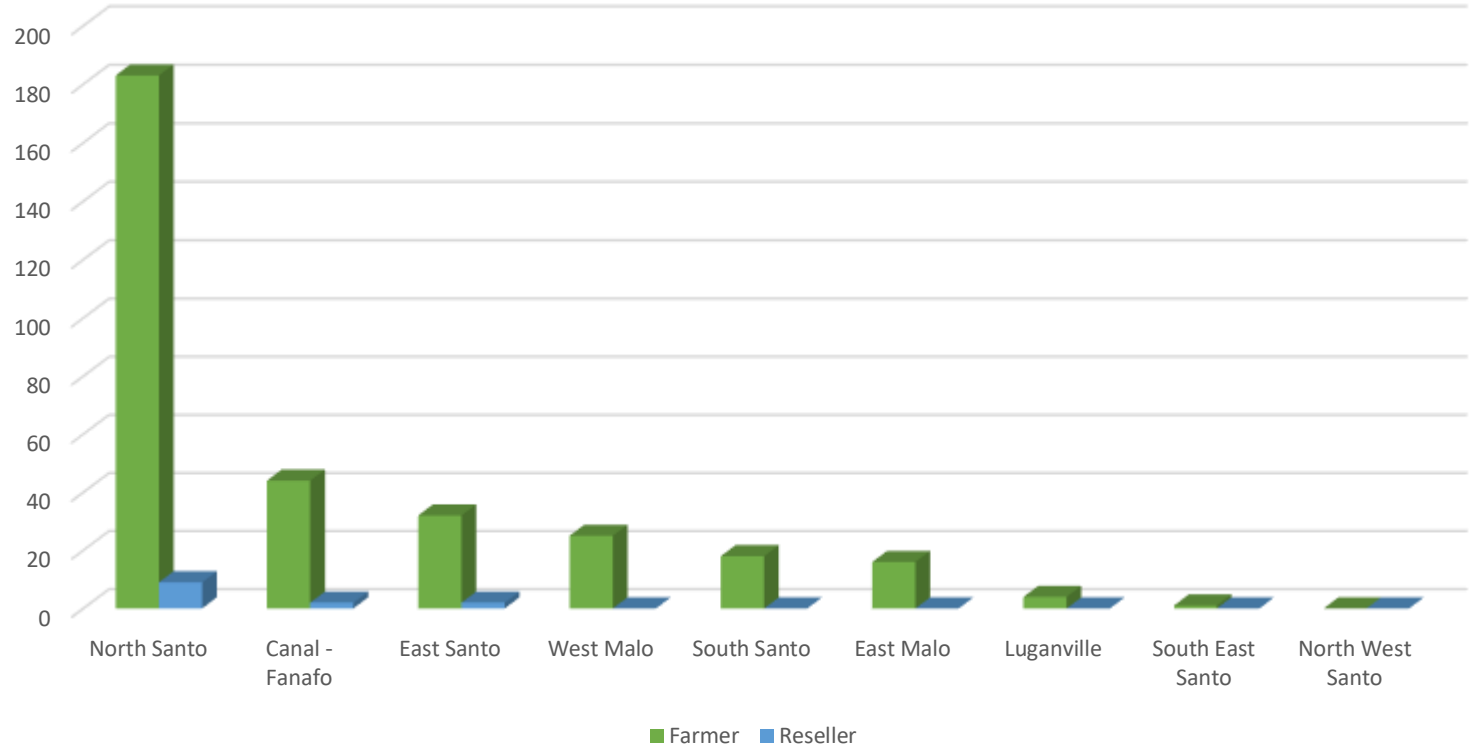


Fig. 5 Number of farmers and reseller at the main Luganville market per area council
Source: Nilwo-Rogers, December 2021

Title: Family farming and food supply to main markets in Santo, Vanuatu

Sub Title: Luganville main market and crop sellers

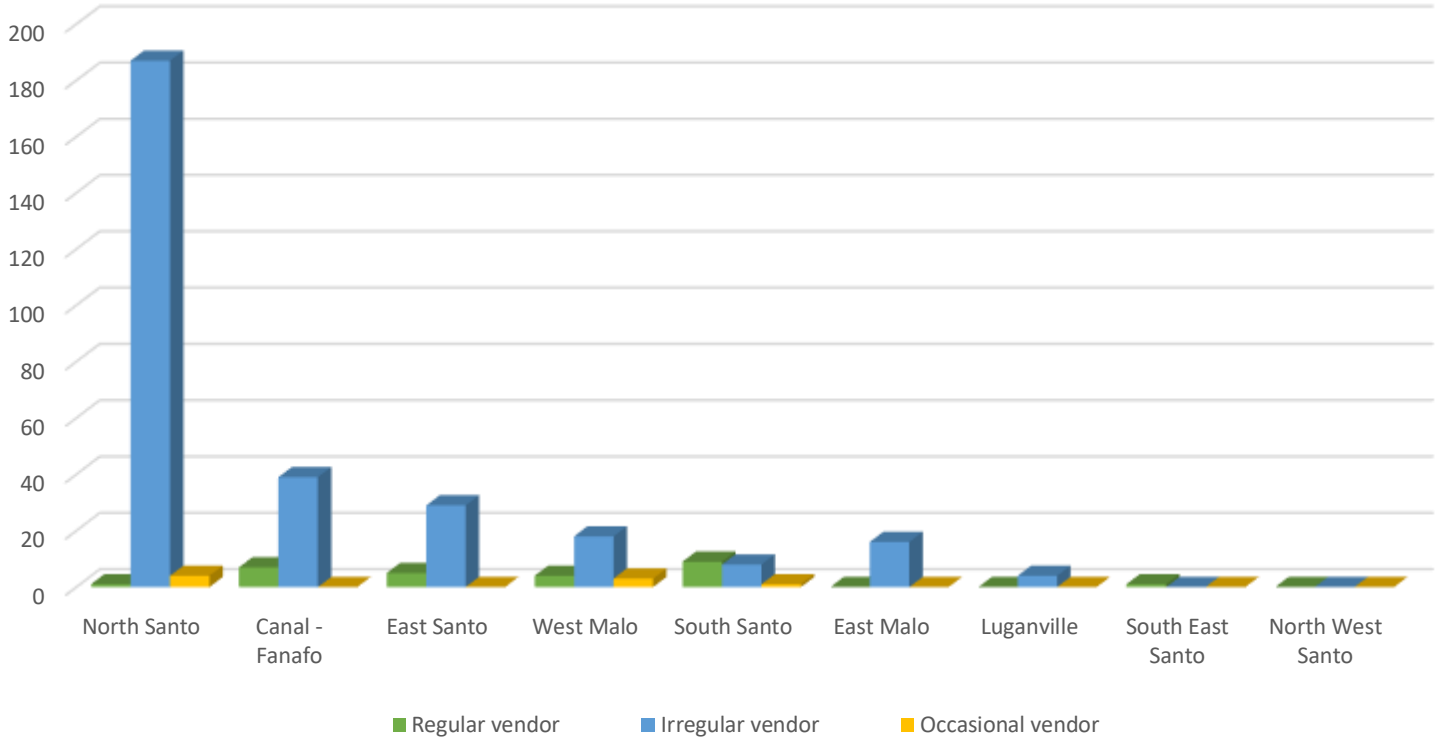


Fig. 7 Frequency of sales at the Luganville main market per area council
Source: Nilwo-Rogers, December 2021

Title: Family farming and food supply to main markets in Santo, Vanuatu

Further study will be carried out to quantify the proportion of cultivated crops harvested and sold in the urban and rural markets.

What is the household consumption and crops distributed or exchanged during cultural activities?

The aim will be to understand the sociocultural dynamics of food supply and distribution in increasing food security in Vanuatu.




Thank you

Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

Nutrition and health methodologies used in schools and communities in Solomon Islands

Josephine Maelaua
SCHOOL OF PUBLIC HEALTH
FACULTY OF NURSING,MEDICINE AND HEALTH SCIENCES
SINU

Disclaimer: the views expressed in this presentation are purely those of the author and may not in any circumstances be regarded as stating an official position of the Research Executive Agency

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 873185

Outline

1. Background Solomon Islands
2. Education services and access indicator
3. Health services and access indicator
4. Overview of nutrition status of Solomon Islands.
5. Nutrition and health methodologies used in Solomon Islands

BACKGROUND - SI

- est population 724,462
- predominantly Melanesian (about 95 per cent) small Polynesian, Micronesian, Chinese and European communities.
- 63 distinct languages , with numerous local dialects.
- English is the official language but Solomons' Pijin is the lingua franca for the majority of people.

Education services in SI

Ministry of education and human resources development (MEHRD)

- **Mission** : deliver quality education for the people of the Solomon Islands in order for them to develop as individuals and possess the knowledge, skills and attitudes needed to earn a living and to live in harmony with others and their environment.

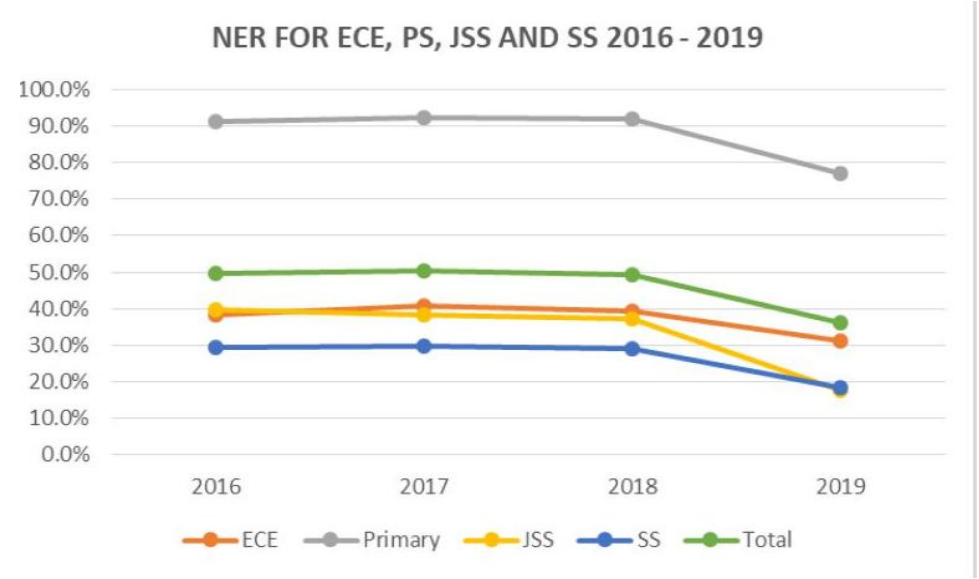
- **Vision** is that all Solomon Islanders will develop as individuals and possess knowledge, skills and attitudes needed to earn a living and to live in harmony with others and their environment. We envisage a united and progressive society in which all can live in peace and harmony with fair and equitable opportunities for a better life. We envision an education and training system responsive to its clients and efficiently managed by its stakeholders and clients. We wish to deliver quality education for everyone in Solomon Islands.

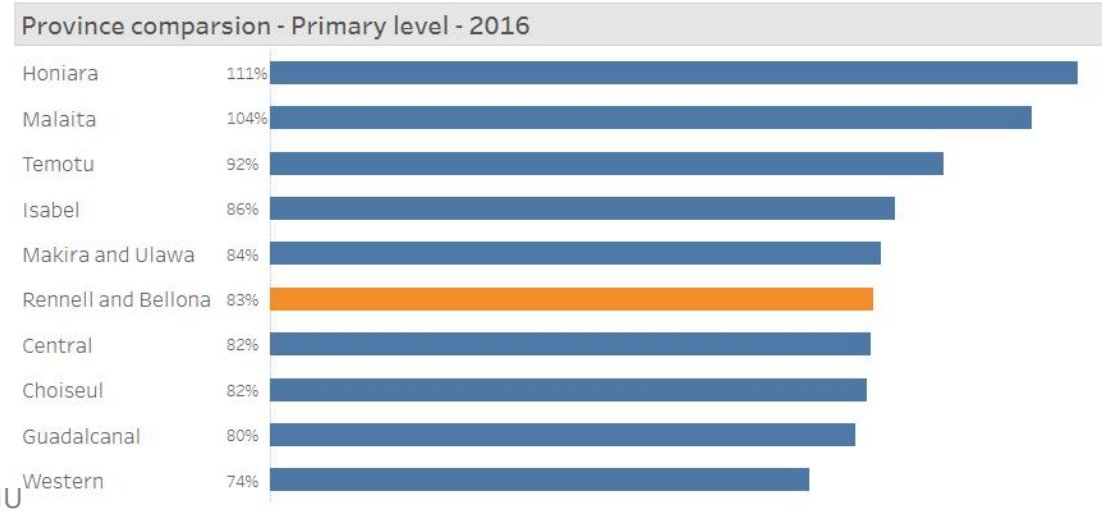
Education access indicator

NET ENROLLMENT RATE (NER)

Number of official age students enrolled per 100 population official age.

- 3-5 years for Early Childhood Education (ECE)
- 6-12 years for primary level (this analysis include prep as the first year in primary)
- 13-15 years for Junior Secondary
- 16-19 years for Senior Secondary

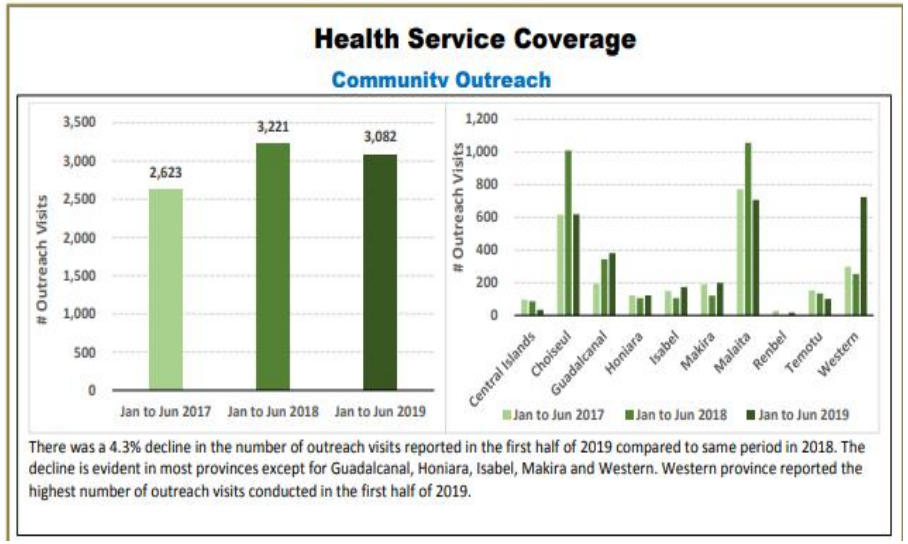




Health services IN SI

MINISTRY OF HEALTH AND MEDICAL SERVICES

Vision : for health goes beyond fighting disease; we intend to contribute to the wellbeing of all our people. Happiness is more than a smile – it is people who are content, fulfilled, and have the freedom to live the life they choose

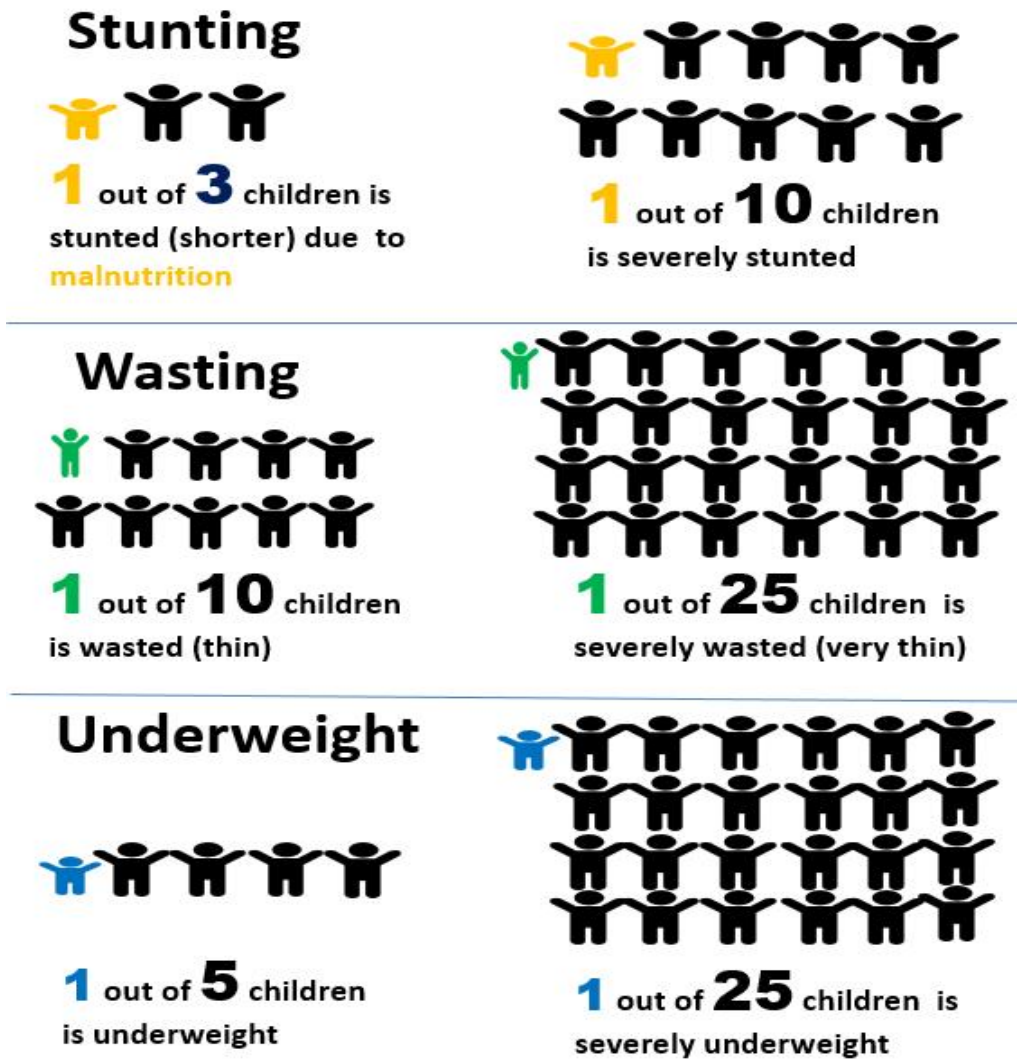


- Population are acessing health services from : **1 National refferal hospital , 13 provincial based hospitals , 35 Area health centers , 116 Rural health clinic and 187 Nurse aid post**

NUTRITION STATUS

Nutritional status children < 5 years:

- 32% of children were stunted
- 8% of children were wasted
- 16% of children were underweight



NUTRITION STATUS CONT'

- **47% high BMI**
- 30% overweight
- 18% obese
- **30-49 years** - **urban areas**
- Combination of biological & sociocultural roles
- **Honiara & Malaita**

- **36% high BMI**
- 26% overweight
- 10% obese
- **40-49 years** - **urban areas**
- Decrease in physical activity while their waist circumference increases.
- **Honiara**

Summary Key Findings -Nutrition

Nutritional status children < 5 years:

- 32% of children were stunted
- 8% of children were wasted
- 16% of children were underweight

IYCF practices:

- 79% initiates breastfeeding within 1 hour after birth
- 76% < 6months were exclusive breastfeeding
- Mean duration of exclusive breastfeeding is 4.5 months
- 22% of all children met the IYCF practices

Nutritional status of adults:

- 47% of women had high BMI
- 36% of men had high BMI

Anemia:

- 39% of all children < 5 years of age
- 41% of all women 15-49 years old
- 54% of all pregnant women were anemic

Research methodology aspects used in SI

- **Study design** : Cross sectional study ,observational study ,survey
- **Method**:(mixed method approach), survey , focus goups ,interview, interview key informant ,qualitative participatory research
- **Sampling/recruitment** : random (snowbal) ,convinience (voluntary), three-stage stratified (nationally represented)
- **Location**: Urban /peri-urban, small and isolated, coastal, inland , semi rural, remote
- **Ethical approval** : researchers' institution, Solomon islands national health research, Solomon Islands national research committee
- **Data Collection tools:** semi-structured, interviewer-administered questionnaire, 24 hour recall, questionaires translated to pidjin, Questionnaire (KAP),Quantitative 24 h multiple-pass recalls (24 h MP),digital kitchen scales, clay/paper for converson.Tape measure, bioelectric impedance scale ,height stick,portable digital weight scale ,
- **Data analysis :** IBM SPSS (Version 25), Tableau (Version 2020.1), RStudio (1.2.5001), and Xyris FoodWorks (Version 10.0.1),qualitative software NVIVO 12 (Version 12.6), one-way ANOVA

Protocol example for community

Reference : Vogliano .et.al (2020)

- **Background (Brief) :** Indigenous Solomon Islanders who have traditionally relied on locally grown biodiverse foods for their primary source of nutrition are now seeing the adverse impacts of changing diets. Due to the increase prevalence of imported and ultra-processed foods, they are now faced with noncommunicable disease such as cardiovascular diseases as leading causes of mortality (WHO, 2018).
- **Study aim :**to assess nutrition transition and diet quality by comparing three geographically unique rural and urban indigenous Solomon Islands population.
- **Study Objectives:**

✓ **Community level -** Describe if and how the food system has changed over the past three decades through qualitative focus group discussions,

✓ **Farm level (if applicable):**Determine the on-farm production diversity for each household using Simpson's diversity score.

✓ **Household level** :Assess household food security levels over the past 12 months using FAO's Food Insecurity Experience Scale

✓ **Individual level** : Calculate the energy, macronutrient, micronutrient intakes among urban, rural (coastal), and rural (inland) indigenous Solomon Islanders through multiple pass 24-hour dietary recalls.

Protocol example for community cor

Reference : Vogliano .et.al Nutrients. 2020 Dec 23;13(1):30.

- **Study Design** : observational mixed-method cross-sectional study design.
- **Study Sites** : 3 geographically distinct sites across the Solomon Islands, (remote, urban , costal)
- **Recruitment :**Snowball sampling at 3 sites to ensure randomized sampling.
- **Eligible criteria:** primary household cook must be of reproductive age (15-50) and all household members
- **Ethical approval:** researcher's institution ,SINU research committee,clearance from the Solomon Islands Ministry of Education and Human Resources and Development and the Solomon Islands National Health Research Committee, Consent from provincial Health directors , consent from village chiefs before commencement of study.
- **Data collection tools: .**Participatory Focus Group Discussions (Qualitative), 24-hour Dietary Recall Method (Qualitative) ,Anthropometrics (Quantitative) ,Nutrition questionnaire (Mixed methods) ,Anthropometric equipment: Tape measure, bioelectric impedance scale ,height stick,portable digital weight scale ,
- **Training :** research methodologies
- **Data analysis:** 24 h MPRs, KAP, anthropometric measurements, and descriptive data analyzed using IBM SPSS (Version 25), Tableau (Version 2020.1), RStudio (1.2.5001), and Xyris FoodWorks (Version 10.0.1)

Reference

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- https://www.google.com/search?q=solomon+islands+COMMUNITIES+&tbm=isch&ved=2ahUKEwi-4Zeag_r6AhXo9jgGHS4lCq4Q2-

République de Vanuatu
Republic of Vanuatu
Ripablik blong Vanuatu

NASONAL YUNIVESITI
BLONG VANUATU

NATIONAL UNIVERSITY
OF VANUATU

UNIVERSITÉ NATIONALE
DE VANUATU

Portail Numérique de Recherche de l'UNV

25 OCTOBRE 2022

Content

- **Présentation**
- **Fonctionnement**
- **Ressources**

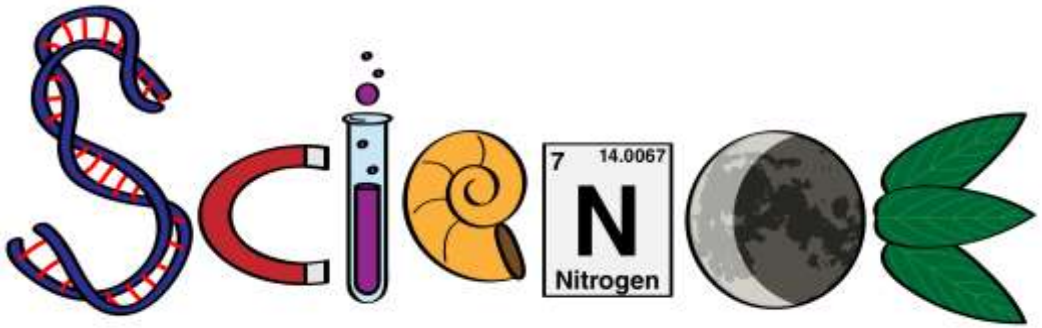
Présentation

Fonctionnement

- Inscription - connexion (libre accès)
- Archive ouverte
- Dépôt OAI-PMH pour la science ouverte
- Recherche documentaire
- Téléchargement & modalité d'accès aux ressources
- Les utilisateurs

Ressources

- Plus de 2500 enregistrements
- Type, sujets & domaines
- ‘Collections numériques’:
  - Archive ouverte HAL
  - Agritrop
  - SPC digital library
  - Bibliothèque IRD (Port-Vila)
  - Chercheurs en affiliation avec VKS, etc.



Merci beaucoup pour votre attention!!

Lino LINSARE

Administrateur du Portail Numérique de Recherche de l'UNV

Email: lino.linsare@edu.univ.vu

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Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

Presentation Sydney University - Young people's perspective

Caillaud Corinne, Kate Owens, Krestina Amon, Rowena Forsyth

Olivier Galy

Pascal Michon

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 873185

Corinne Caillaud, Kate Owens, Rowena Forsyth, Krestina Amon
University of Sydney
Charles Perkins Centre

Olivier Galy
University of New Caledonia, Laboratoire Interdisciplinaire de Recherche en Education

Pascal Michon
National University of Vanuatu

Presentation FALAH workshop
25/10/2022

Addressing health and climate challenges in Australia and the Pacific region through partnerships with schools and co-design with young people

Agenda

- Project overview
- The team
- The approach
- Co-design activity
- Discussion and return on experience

THE UNIVERSITY OF SYDNEY

Overview of the project

Co-located geographically, Australia and Pacific Islands are multicultural nations with a large population of young people. Many of those are exposed to health or climate threats and are prevented from reaching their full potential.

Engaging with young people, determining lived experiences, views, attitudes and priorities must be a focus of research and education strategies.

In partnership with schools, this project aims to collaborate with adolescents and to identify research and education priorities to:
1) address health and climate challenges and
2) assess how digital technologies can be leveraged for action and impact.

Objectives and approach

Objective

Partner with schools and identify priorities for action through a process of engagement and co-design (co-production) with young people.

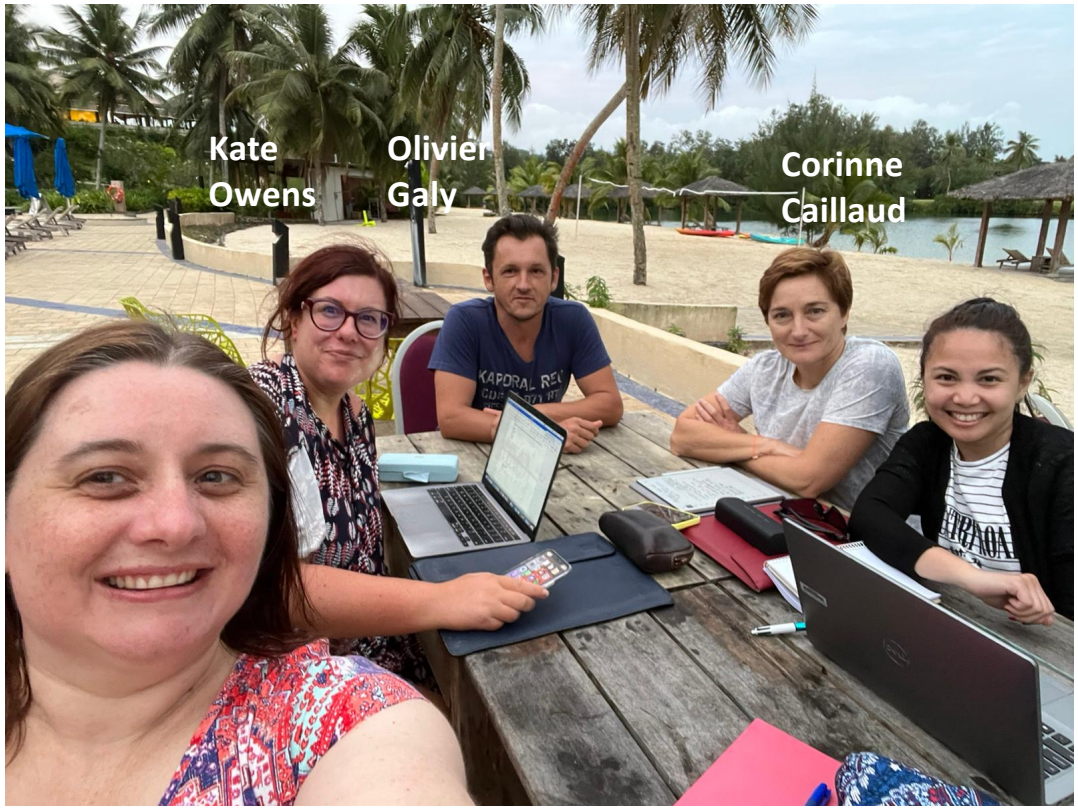
Approach

- Partnership with schools
- Collaboration with teachers to establish framework for engagement
- Implement activities in the classroom
- Establish a group of student leaders across the 3 countries that will work together and collaborate with the research team to produce research outputs

The Team

Name	Institution
Dr Corinne Caillaud	Faculty of Medicine and Health, School of Medical Sciences, Charles Perkins Centre
Dr Olivier Galy	University of New Caledonia
Dr Stephanie Partridge	Faculty of Medicine and Health, Charles Perkins Centre
Dr Louisa Peralta	Faculty of Arts and Social Sciences and Charles Perkins Centre
Dr Juliana Chen	Faculty of Medicine and Health, Charles Perkins Centre
Dr Rowena Forsyth	Faculty of Medicine and Health, School of Medical Sciences, BioInformatics and Digital Health
Dr Kate Owens	The University of Sydney Law School, Sydney Environment Institute, Sydney Nano
Dr Naseem Ahmadpour	The University School of Architecture, Design and Planning
Dr Krestina Amon	Faculty of Medicine and Health, School of Medical Sciences, BioInformatics and Digital Health
Dr Susan Park	Faculty of Art and Social Sciences, Sydney Environment Institute, Sydney Southeast Asia Centre
Dr David Raubenheimer	Faculty of Science, Charles Perkins Centre
Dr Sarah Lewis	Faculty of Medicine and Health
Dr Stephane Frayon	University of New Caledonia
Dr Paul Zongo	University of New Caledonia
Mrs Marie-Jeanne Urvoy	University of New Caledonia
Mr Guillaume Wattelez	University of New Caledonia
Dr Pascal Michon	National University of Vanuatu
Dr Jacquie Bay	The University of Auckland, Liggins Institute

The Team



Rowena Forsyth

Krestina Amon

Addressing health and climate challenges in Australia and the Pacific region through partnerships with schools and co-design with young people

Health

Determinants of health, NCDs, curriculum, conceptions of wellbeing, digital health information and role of digital tech.

Physical activity

Conceptions, curriculum, events/opportunities, awareness of physical activity/health, popular sports, role models

Food

Diet, nutrition knowledge, food perceptions, food access, food prep activity, consumption at school

Climate change

Awareness, conceptions, curriculum, resilient education, adaptation and risk preparedness/ management processes + young people.

Role and impact of **gender**, **information flows**, intergenerational **equity**, role of youth as change **agents** and **social connectors**

Framework

Partnership with school

- Engage with school's teachers
- Presentation of project by researchers
- Identification of themes (PA, food, digital tech, climate)
- Develop in-class activity with teachers

In Schools Class activities (yr 10-12)

- Story telling
- Writing letters
- Self-reflection
- Group work

Class activities Outcomes Phase #1

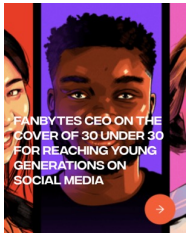
- List of priorities / actions
- Ranking/prioritisation

Student partners group Students as collaborators

Collate and interpret all priorities / actions from all schools

Production of research outputs, Phase #2

- Artwork
- Tiktok campaign
- Position paper
- Research article



Exercise instructions

- Provided with 3 scenarios
- 5 minutes of individual reflection on each scenario answering the question(s)
- Write 5-10 lines or dot points per scenario
- After the 3rd scenario talk to the other members of your group about what arose
- Identify 3-4 actions or priorities across your reflections
- Choose one person to bring sticky notes to the wall
- We'll collectively group and rank them

Scenario 1

Melelani is a 16 year old girl who lives in Efate in a house with her 2 older brothers Tamatoa and Noa (aged 18 and 21), her young sister Poe (aged 13) and her parents.

She is starting the second week of Term 2 this year at her local government school which she walks to from her home in 15 minutes.

After dressing for school, she decides to eat breakfast.

What foods will she eat and where will they be sourced from?

Scenario 2

Three months later Melelani is preparing for her exams. She has been using her mobile phone to watch YouTube videos of 'exam preparation tips'. One of the accounts that she likes to follow 'EXAMSGOWELL' has a presenter who talks about the importance of eating healthy meals and doing exercise, both of which help people to sleep better and gain higher marks in exams.

Melelani shares the video with her friends during lunchtime and they talk about what they think about the diets they have now and how they exercise. They also think about what they'd like to do differently.

What aspects of diet and exercise do you think they discuss?

What challenges might they face to adopt different diets and exercises?

Scenario 3

Ten years later Melelani is 26 years old and still living in Efate with her husband Charlie and her 3 year old daughter Rasiella. Their house has some good faming land around it which her and Charlie work together to produce food for themselves. They sometimes have some excess food which they trade with their neighbours.

Over the past 5 years cyclones have become more frequent and severe which means the variety of vegetables and fruits they and their neighbours can grow has reduced.

Which crops are they no longer able to grow?

What have they substituted for these?

How have their farming practices changed?

What do these changes mean for their nutritional intake and health?

Feedback please!

- Would this type of exercise work well with young people?
- Is the transition from individual reflection to group discussion achievable?
- Is the transition from examples to actions/priorities achievable?

Thank you !

THE UNIVERSITY OF
SYDNEY

Addressing health and climate challenges in Australia and the Pacific region through partnerships with schools and co-design with young people

RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

UNIVERSITÉ DE LA NOUVELLE-CALÉDONIE

FALAH
Family farming, lifestyle & health

N° 873185

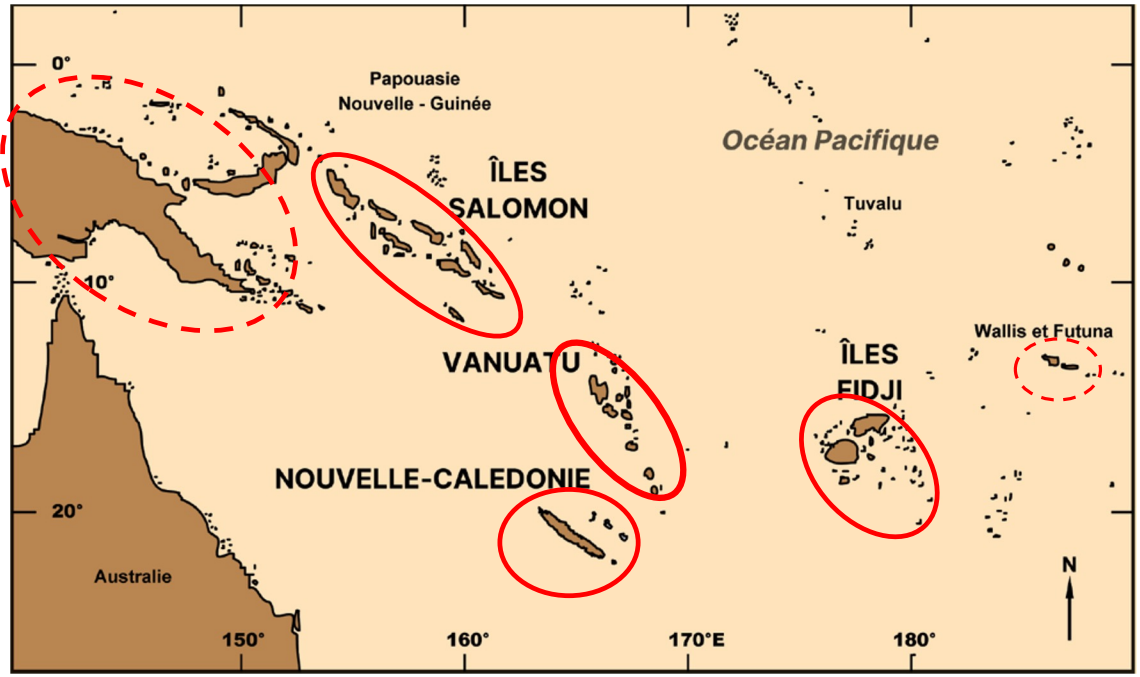
HORIZON 2020
LE PORTAIL FRANÇAIS DU PROGRAMME EUROPÉEN POUR LA RECHERCHE ET L'INNOVATION

Promote and revitalise family farming to improve the health of Pacific populations and ensure food security in the context of rapid social and economic transformations and *climate change*, which effects are particularly harmful to Pacific Islands.

3.1 Examine the effects of fam. farm. on lifestyle and its impact on the health and well-being

3.2 Explore diet and physical activity in families practicing fam. farm.

3.3 Analyze inter-generational benefit on fam. farm. lifestyle



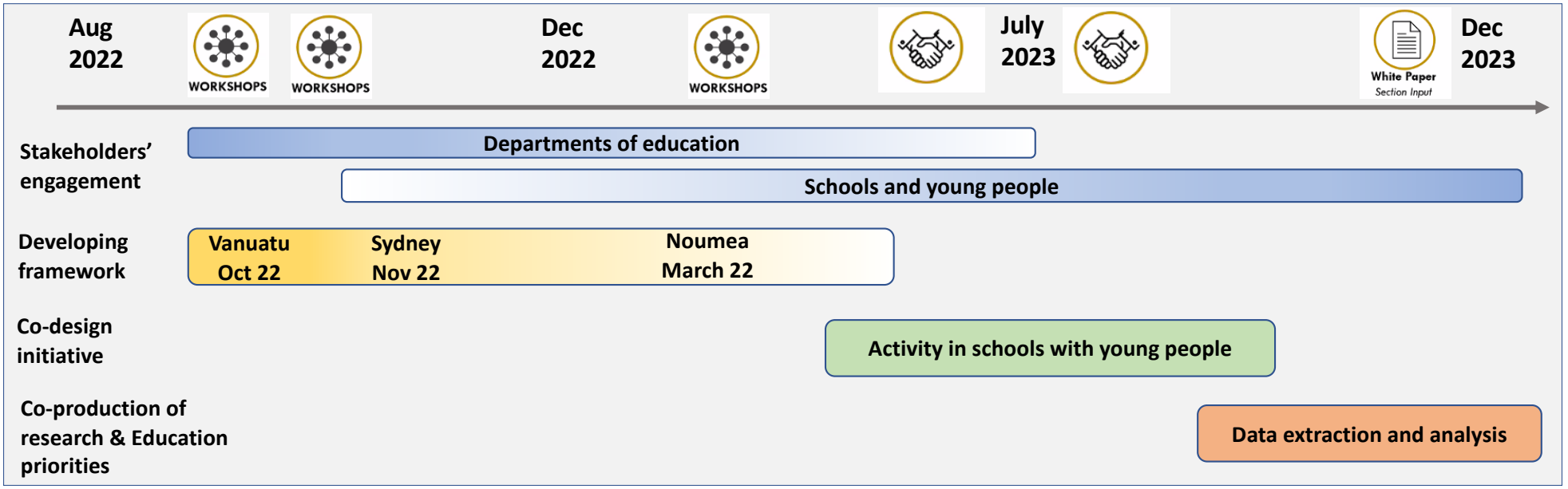
Social	Spatial	Temporal
School	Rural	Seasonal aspects
Families/Households	Peri Urban	Inter generational
Communities	Urban	Semi longitudinal
Public places		

Addressing health and climate challenges in Australia and the Pacific region through partnerships with schools and co-design with young people

Figure 2
Planning & milestones

SDG 3: *Target 3.4, indicator 3.4.1 - Target 3.c indicator 3.c.1*
SDG 4: Target 4.3, Indicator 4.3.1 - Target 4.7, Indicator 4.7.1
SDG 11; Target 11.7, indicator 11.7.1
SDG 13: Target 13.3, indicator 13.3.1 - Target 13.b, indicator 13.b.1
SDG 17: Target 17.16, indicator 17.16.1

Figure 2



Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

Reminder of secondment implementation and next events

Marine MARTINEZ (UNC)

Disclaimer: the views expressed in this presentation are purely those of the author and may not in any circumstances be regarded as stating an official position of the Research Executive Agency

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 873185

SECONDMENTS IMPLEMENTATION
1. BEFORE YOUR FIRST SECONDMENT (M-1)

- **<u>Provide your personal documents to your Insitution Admin Focal Point</u>**
  - GDPR consent form
  - Passport copy
  - CV / diplomas to confirm your status:
    - **Experienced Researcher** : has PhD or > 5years experience in Research,
    - **Early Staged Researcher** : PhD student
  - Personnal bank details *(if flat rate sent directly to you)*
  - Contract / employment certificate for the duration of the project *(can be dealt by your Admin Focal Point)*

SECONDMENTS IMPLEMENTATION
2. BEFORE THE SECONDMENT (M-1)

- **<u>Complete part 1 of your Individual Research Plan (IRP) and send it to your Insitution Admin Focal Point</u>**

- Part 1: to be sent to the secondee's institution + host insitution : 1 month prior to the secondment

- Make sure the Researcher(s) you'd like to work with will be there while you're being seconded

- Your instititution's AFP will send the document to the host institution and have it signed to confirm they can host you

RECORD FOR H2020-MSCA-RISE-FALAH Grant Agreement number: 873185

FALAH SECONDMENT: SCIENTIFIC REPORT

Individual Research Plan - Part 1
(to be sent 1 month prior to the secondment)

Beneficiary institution / country name*:		*Université de la NouvelleCalédonie (UNC)*	**WP*:**	**WP 3**	
Personal information:	**Name*:**	*GALY*	**Seconded to*:**	*University of South Pacific (USP)*	
	Profile* :	*ER -Experienced Researcher*	**Month of project*:**	**from*:**	**to*:**
	Profile number:	*8*	*M21-June 2022*	*13 of June 2022*	*13 of July 2022*

Missions

Description and objectives*		***Actions linked to coordination tasks , to WP3 (responsible of the WP3) and support to the organisation of the Workshop.***	**Host institution Validation:** *Name + title**
Methodology*		*Quantitative approaches to measure diet, physical activit and health in families.*	LAU DR. VILIAMU IESE 
Planned actions*	*Research*	*share methodologies linked to lifestyle and health developped in New Caledonia and devleopment of implementations in Fiji*	
	Training	*Quantitative methods for diet, physical activity and health*	
	Education	*participation to a seminar at USP and Ph D student training*	*10 May 2022*

SECONDMENTS IMPLEMENTATION
2. BEFORE THE SECONDMENT (M-1)

❑ **Organise your secondment**

- Book your flight ticket : send it to your institution Admin Focal Point + host institution
- (complete a Mission Order with your flight tickets dates)
- For fund management: see with your Admin Focal Point how your institution will proceed:
  - Transfer the flat rate (pro-rata according to the intended duration) directly to the seconded staff member in advance or via different instalments.
    - ❖ **OPTION CHOSEN BY UNC FOR UNC + USP + MOET + VARTC + SINU :**
      - ✓ **90% after Mission Order completed (flight ticket sent to UNC AFP)**
      - ✓ **10% once back to sending institution (boarding pass sent to UNC AFP)**

    OR

  - managed centrally by the institution according to the specific needs of the secondment (complying with the flat rate of the consortium agreement)

SECONDMENTS IMPLEMENTATION
2. BEFORE THE SECONDMENT (M-1)

❑ **Organise your secondment**

➢ The flat rates are intended to finance all mobility-related costs of the secondee :

- airfare
- accommodation
- visa
- local transport / shuttles
- insurance
- food
- Etc.

Secondment Type	Flat rate (person.month)
From **Pacific TC** : SINU, USP, MOET, VARTC To **NC** : UNC, IRD, IAC Or From **NC** : UNC, IRD, IAC To **Pacific** : SINU, USP, MOET, VARTC	2400 euros
From **NC** : UNC, IAC To **Australia** : USYD, UNSW, UOW, WSU	4000 euros
From **Pacific TC** : SINU, USP, MOET, VARTC To **Europe** : IRD, UT2J, CNRS, Kula e.V	4000 euros

SECONDMENTS IMPLEMENTATION
3. DURING THE SECONDMENT

- **<u>Keep evidence of secondment implementation</u>**

- **Evidence of travel:** tickets and boarding pass

- **Evidence of accomodation:** hotel reservation, B&B, contract for renting an appartment, etc.

- **Evidence of physical presence in the host premises:**
  - hosting arrangment, lab sheets, time sheets, etc.
  - Paperwork/scientific article produces
  - Library records to show research and innovation activities
  - Exchanges of emails concerning work done, etc.

SECONDMENTS IMPLEMENTATION

4. AT THE END OF THE SECONDMENT – BEFORE ~~RETURNING HOME~~

- **Complete your secondment record and have it signed by the host insitution**
- **Send it to your admin focal point for encoding on the EU platform for the continuous reporting of the project**

RECORD FOR H2020-MSCA-RISE-FALAH Grant Agreement number: 873185

To fill up, be signed by your host and print during your secondment

And then return to your Admin Focal Point at the end of your secondment

Beneficiary institution / country name*:	*Université de la NouvelleCalédonie (UNC)*	
Personal information:	Name*:	*Olivier GALY*

GREY CELLS: To be filled by the institution's Admin Focal Point	
Secondment eligibility check:	
Staff of the sending organisation :	*YES*
Full time dedication to the project:	*YES*
Profile :	ER/ ESR
Profile number: On EU platform	(SYGMA)

SECONDMENT RECORD :

Month of project:	secondment's dates from*:	secondment's dates to*:	WP*	Date and signature of the secondee*:	Name, Date and signature of the hosting institution at the end of the secondment*:
M21-June 2022	*13/06/2022*	*13/07/2022*	2	*13/07/2022*	LAU DR. VILIAMU IESE 25/07/2022

ADMIN RECORD:

Individual research plan + Scientific report signed by staff + hosting institution :	X
Proof of payment to staff:	X
Justification of secondment sent to sending institution :	X
RD encoded on SYGMA :	X
Researcher's questionnaire done :	

SECONDMENTS IMPLEMENTATION
5. AFTER THE SECONDMENT (M+1)

- **Complete part 2 of your Individual Research plan (scientific report) and sent it to your Admin focal point + host insitution : 1 month after to the secondment at the latest**

- **Additional report can be attached**

RECORD FOR H2020-MSCA-RISE-FALAH *Grant Agreement number: 873185* *Reporting year : 2022*

FALAH SECONDMENT: SCIENTIFIC REPORTS

Scientific report (to be sent 1 month after the secondment)					
Beneficiary institution / country name:		CNRS - University of Toulouse UT2J, France	WP:		
Personal information:	Name:	SERRA-MALLOL Christophe	secondment's dates		
Profile :			Month of project:	from:	to:
Profile number:			17-18	February 17th	April 5th
Mission					
Description and objectives		Conduct a survey of local politicians in New Caledonia (municipalities, local Congress, Provinces, CESE) to understand their perception of current and future issues of family farming, and prepare the collection materials for the Vanuatu and Salomon survey among family farming members. Participate in FALAH project meetings with project coordinators and associated webinars. Participate in FALAH related project meetings (SPAR, Pacific Food Lab…). Train and support Master and PhD students in research methodology, in particular using qualitative research tools. Participate in writing scientific papers.			
Methodology		Qualitative methodology : individual and collective face-to-face interviews with local politicians.			
Effective actions	Research	From 3rd March to 4th April (New Caledonia)			
	Training	From 18th Feb to 4th April (New Caledonia)			
	Education	Scientific seminar about qualitative methodologies : 30th March (UNC, New-Caledonia)			

SECONDMENTS IMPLEMENTATION

Recap

1. BEFORE YOUR FIRST SECONDMENT (M-1)

- ❑ Provide your personal documents to your Insitution Admin Focal Point

2. BEFORE THE SECONDMENT (M-1)

- ❑ Complete part 1 of your Individual Research Plan (IRP) and send it to your Insitution Admin Focal Point
- ❑ Flat rate will be transfered to your personnal bank account / expenses at the charge of your institution
- ❑ Organise your secondment

3. DURING THE SECONDMENT

- ❑ Keep evidence of secondment implementation

4. AT THE END OF THE SECONDMENT – BEFORE RETURNING HOME

- ❑ Complete your secondment record and have it signed by the host insitution
- ❑ Send it to your admin focal point for encoding on the EU platform for the continuous reporting of the project

5. AFTER THE SECONDMENT (M+1)

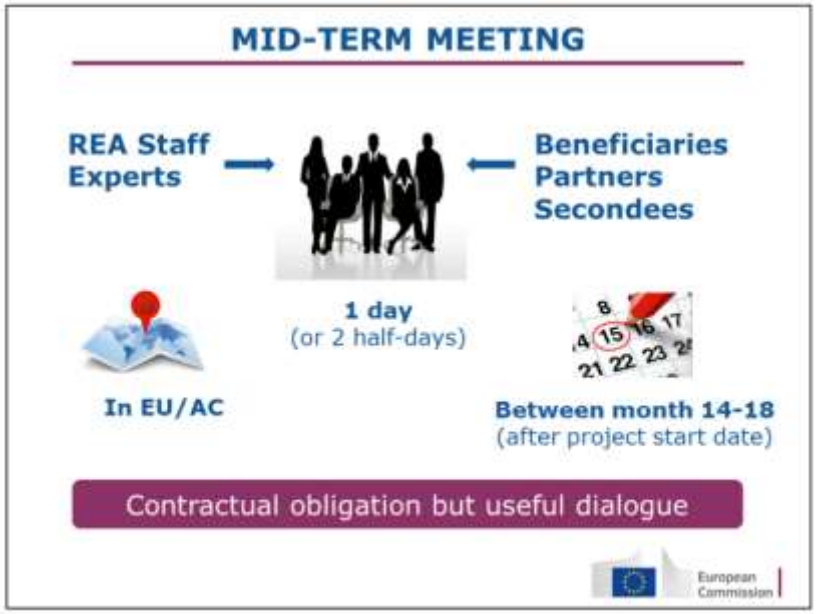
- ❑ Complete part 2 of your Individual Research plan (scientific report) and sent it to your Admin focal point + host insitution : 1 month after to the secondment at the latest

FALAH next events

Event	Location	Dates
Workshop Alimentation & Agriculture	Sydney, Australia (USYD, WSU)	21st – 24th of November 2022
➢ Configure EduRoam for Wifi connection on site ➢ Apply for visa 408 – C. CAILLAUD(USYD) or N. GEORGEOU (WSU) for application procedures		
2nd seminar & 2 workshops on WP2 and 3	New Caledonia	March 2023

FALAH next events

Event	Location	Dates
Mid Term Meeting	Europe (Montpellier, to be confirmed)	May 2023



Necessary participants:

a) The REA staff (PO) and potentially an External Monitor (Expert) accompanying REA staff

b) **The beneficiaries and the partners of the project, as well as the seconded researchers (secondees)**

Purpose of the Mid-term meeting:

- To assess the general progress of the project versus its original planning and objectives
- To identify project implementation issues and identify feasible solutions
- To meet researchers seconded in the project

FALAH next events - overview

Event	Location	Dates
Seminar with 2 WS on WP2 & 3 + methodological orientation test (only with tasks and WP leaders and collaborators)	Vanuatu, Port Vila	March 2022 → November 2022 ✓
Methodological & epistemological workshop and first results	Fiji	June 2022 ✓
Workshop Alimentation & Agriculture	Sydney, Australia (USYD, WSU)	November 2022
Second seminar + 2 workshops on WP2&3	Nouméa	March 2023
Mid Term Meeting	France	May 2023
First conference: presentation and dissemination of the project results	Vanuatu MOET	June 2023
Workshop enrichment & methodological intersection	Australia (UOW/UNSW)	October 2023
Third internal seminar	Solomons	May 2024
Second conference: presentation and dissemination of the project results	Fiji	October 2024
Final conference	Nouméa	June 2025

Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

Thank you !

Disclaimer: the views expressed in this presentation are purely those of the author and may not in any circumstances be regarded as stating an official position of the Research Executive Agency

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 873185

Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

"Family farming in the Pacific: what does it mean? How to build a collective, shared and relevant definition of FF in the Pacific?"

Séverine Bouard (IAC) & Catherine Sabinot (IRD)

In collaboration with Kim Jandot, etc.

Disclaimer: the views expressed in this presentation are purely those of the author and may not in any circumstances be regarded as stating an official position of the Research Executive Agency

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Let’s start with a short quizz!

https://ahaslides.com/W9SMN

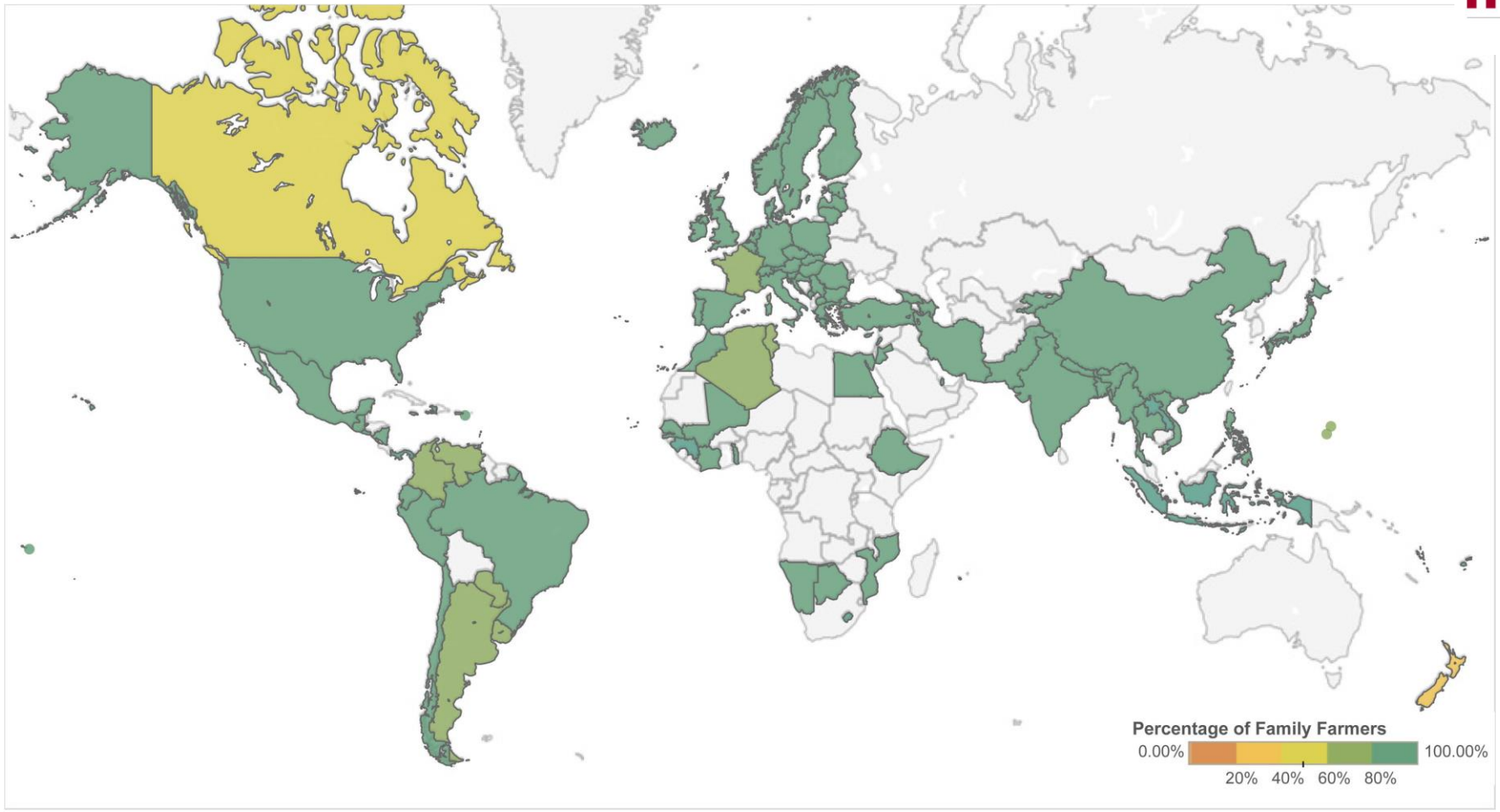
Results: Q1

Insérer les résultats de la question 1,2,3,4,5

Definitional issue: what is FF?

- There is no universally accepted definition of “family farming” (Lowder and al., 2014)
- The absence of a standardised and operational definition of family farming in the censuses and the low use of this name in many regions of the world are at the origin of some confusion which implies a necessary proposal for clarification. (Bosc et al., 2018)
- For some authors, there is no confusion or debate around the term itself, except when the context in which family farming operates evolves drastically or if the family farm itself experiences some big changes. However, both conditions are here, which requires an overhaul of the concept of family farming. (Van der Ploeg, 2016).

Few illustrations of the importance of FF



Source: Own calculations.

Figure 1. World map with countries covered and the percent of family farms in each country
Benjamin E. Graeub, M. Jahi Chappell, Hannah Wittman, Samuel Ledermann, Rachel BeznerKerr, BarbaraGemmill-Herren, 2016, **The State of Family Farms in the World, World Development, 85, 1-15**

Few illustrations of the importance of FF

Figure 1. World map with countries covered and the percent of family farms in each country
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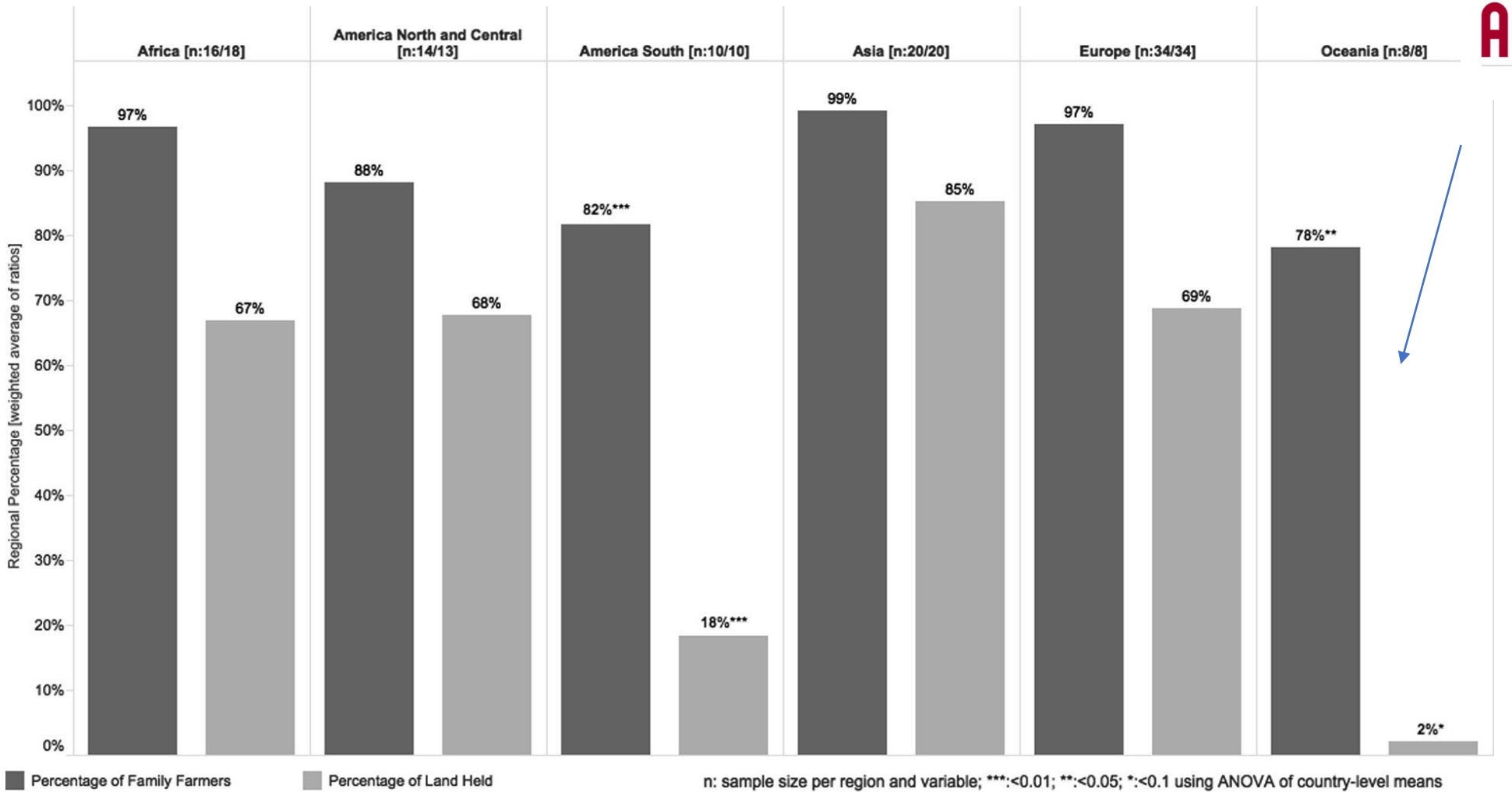


Figure 3. Share of family farmers by regional averages.

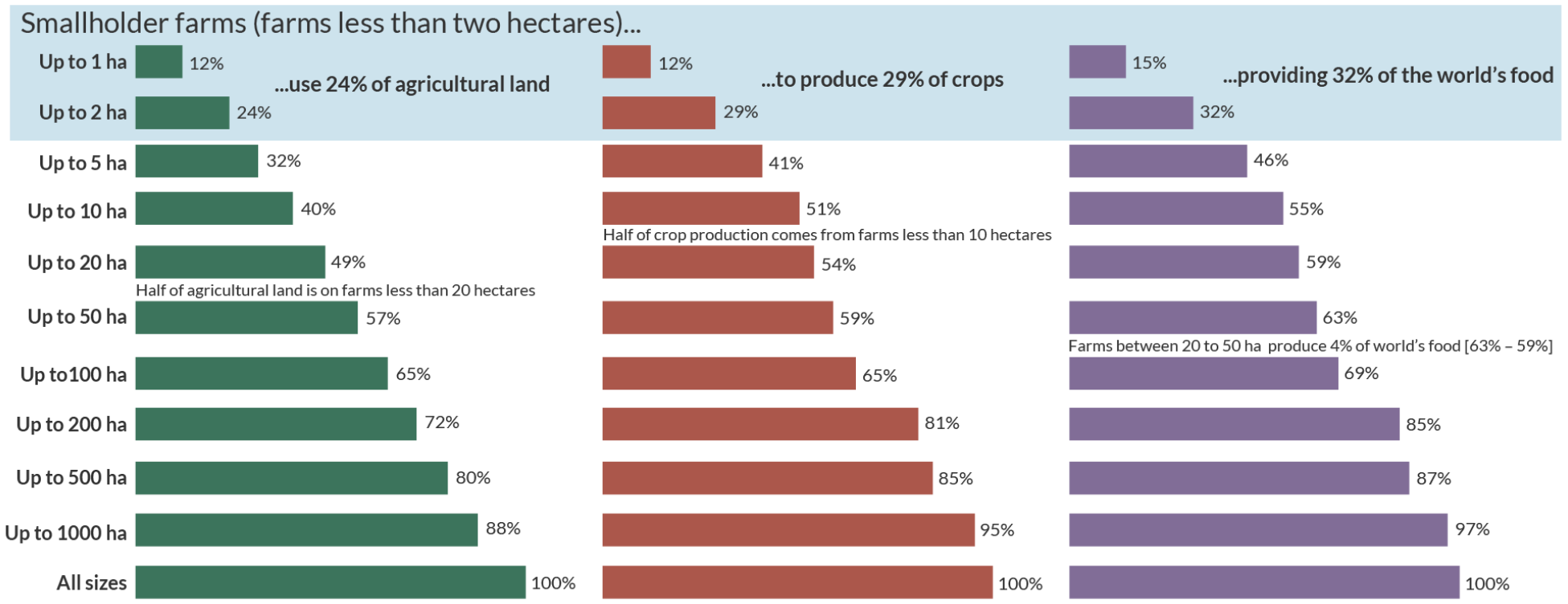
Benjamin E.Graeub[a]M. JahiChappell[bc]HannahWittman[d]SamuelLedermann[e]Rachel BeznerKerr[f]BarbaraGemmill-Herren, 2016, **The State of Family Farms in the World, World Development, 85, 1-15**

But smallholders family farmers doesn't mean weak contribution to world's food!

Smallholder farms produce one-third of the world's food

The cumulative share of the world's agricultural land, crop production and food supply, broken down by farm size.

Our World in Data



Source: Vincent Ricciardi et al. (2018). How much of the world's food do smallholders produce? *Global Food Security*.
OurWorldinData.org – Research and data to make progress against the world's largest problems.

But family farmers doesn't mean weak contribution to world's food!

A recent study (Sarah Lowder, Sanchez, and Bertini, 2019) also estimates the share produced on family farms.

- Definition of a family farm is broad: operated by an individual or group of individuals, where most labor is supplied by the family.
  - → they can be of any size – many family farms are large.
  - → Family farms produce around 80% of the world's food.

- Smallholders and Family farmers should not be used interchangeably because they can be very different
- Increasing the productivity of smallholder farming is a crucial step in countries transitioning from poverty to middle-incomes, for example in Vanuatu
- No romanticization of a future where most still spend their time working the fields for small returns

→ Risk of being trapped in poverty

→ This is for all these reasons, that they are at the heart of the Falah project!

Family farming in the Pacific

- High level of productivity despite less access to productive resources (inputs and support)
  - →In Fiji, 84% of yams, cassava, corn and beans on only 47% of the land (FAO, 2014)

- But in the Pacific:
  - → few data
  - → (very) smallholders
  - → Narrow, even very narrow market and the place on non-market practices
  - → Variable place of cash crops
  - → Diversity between the islands…
  - → and strong connexions with the Ocean (lagoon gardens, place of fishing activities, etc.)

→Difficulties to embrace all rural activities: opportunities with **livelihoods approach**

→ What place for fishing activities?

Evolution of the use of the term “family farming” in the FAO’s “The State of the World” publications

FAO : 2 definitions

Family farming is “a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production which is managed and operated by a family and predominantly reliant on family capital and labour, including both women’s and men’s. The family and the farm are linked, co-evolve and combine economic, environmental, social and cultural functions.” »

“A family farm is an agricultural holding which is managed and operated by a household and where farm labour is largely supplied by that household.”

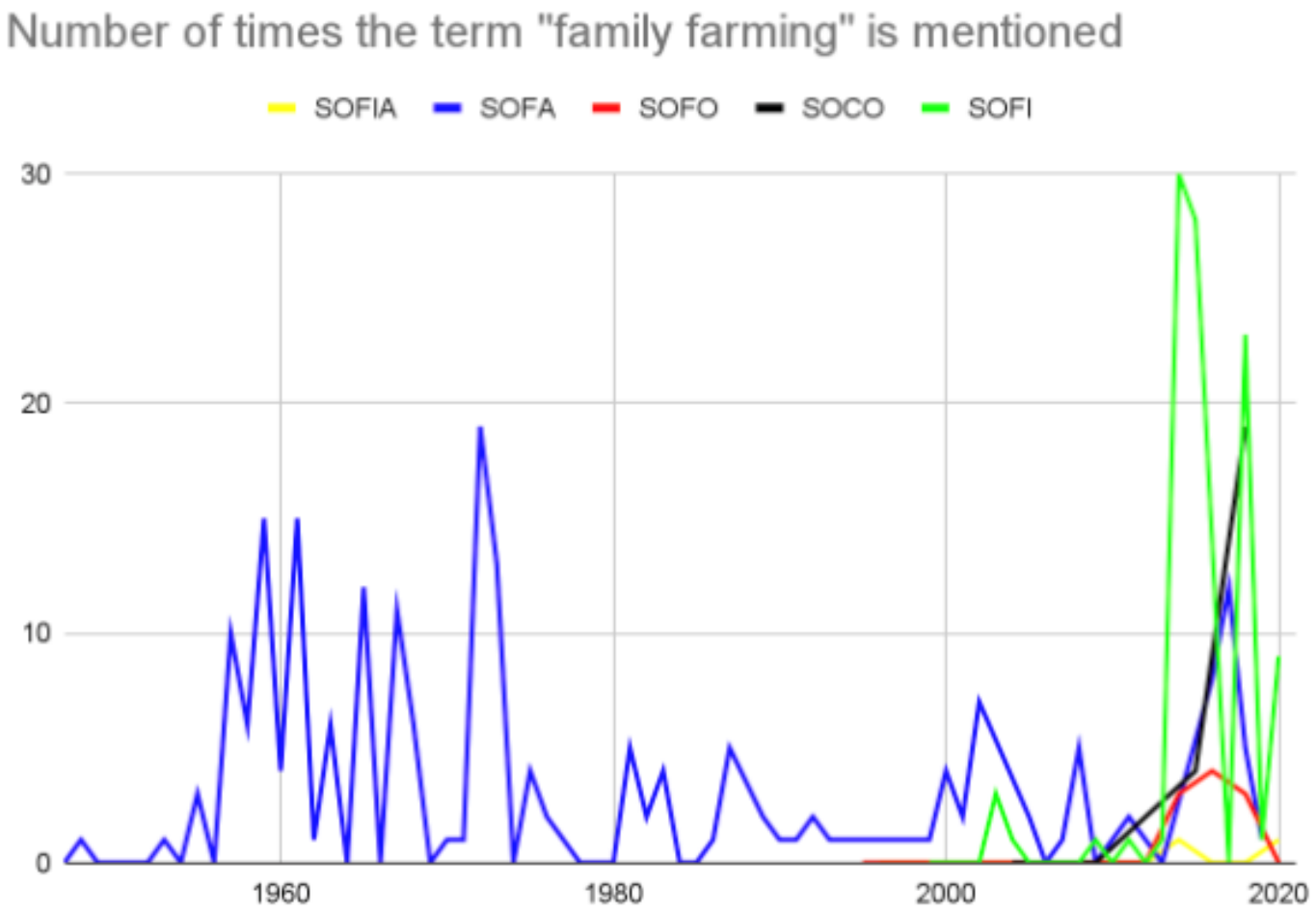
Evolution of the use of the term “family farming” in the FAO’s “The State of the World” publications

FAO regularly publishes reports in the collection “*The State of the World*” to provide a comprehensive overview of the most pressing global issues and challenges affecting the world today.

Five types of publications :

- “*The State of World Fisheries and Aquaculture*” (SOFIA)
- “*The State of the World's Forests*” (SOFO)
- “*The State of Food Security and Nutrition in the World*” (SOFI)
- “*The State of Food and Agriculture”* (SOFA)
- “*The State of Agricultural Commodity Markets*” (SOCO).

Methodology



- Keyword search
- *“family farming”,“family farm”, “family farms”, “farm family”, “farm families”, “family farmer”, “farmer families” and “family farmers”.*
- English vs Français

“The State of World Fisheries and Aquaculture” (SOFIA)

Published every two years. 14 reports.

Not use before 2014.

The term appears only twice.

Differences between english and french

2014 Year of family farming decreed by the United Nations (UN)

> “*These efforts are also very much aligned with the 2014 International Year of Family Farming, during which we will continue to highlight the importance of aquaculture – especially smallscale fish farming – and support its development.*” (SOFIA 2014)

“The State of the World's Forests” (SOFO)

- Published every two years. 14 reports.
- Not use before 2014.
- « “Forest dwellers are part of the group of family farmers »
- 4 times in 2016; 3 times in 2018.

“The State of Food Security and Nutrition in the World” (SOFI)

- Published annually. 20 reports.
- Not constant over time

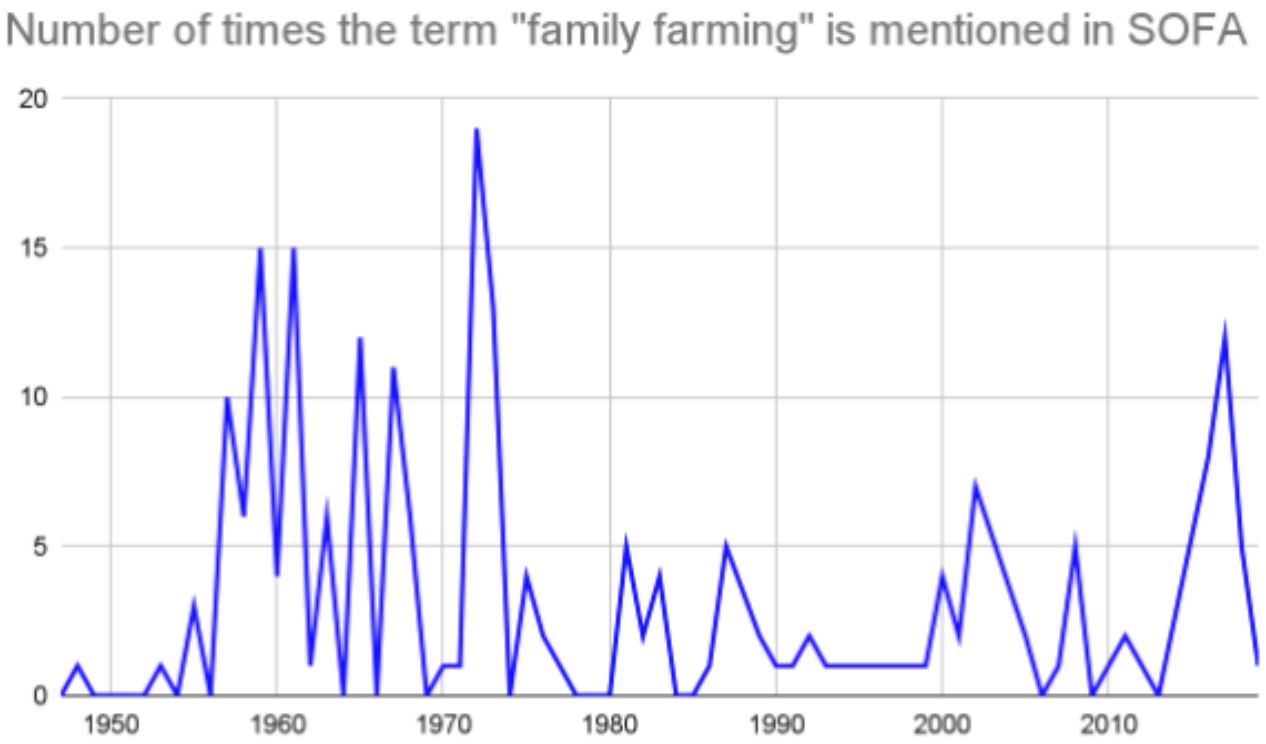
  > Family Farming as a seasonal concept ?
- Not use before 2003

“The State of Food and Agriculture"

Published annually. 71 reports.

- “farmers (who) are largely on a subsistence basis”
- English and French terms in 1957
  * “farm families” > “ménages ruraux exploitants” or “exploitants agricoles”.
  * “farm family” > “ménages d’agriculteurs”
  * “nonfarm families” > “ménages non agricoles”
  * “family farm ownership » > “propriété familiale” or “petite propriété familiale”
  * “family farm” >“exploitations familiales”.

- Place of fishing in family farming visible only in 2014: l’agriculture familiale regroupe “*entre autres, les petits et moyens exploitants, les populations autochtones, les communautés traditionnelles, les pêcheurs, les bergers, les habitants des forêts et les cueilleurs*”.



“The State of Food Security and Nutrition in the World” (SOFI)

What does family farming significate for people who live on several family activities?

> How is the term "family farming" perceived by the people of the Pacific?

> Does this perception correspond to the official definition of the term, proposed by the FAO?

Interview ‘s guide

> 5 main questions to ask to various actors in 2 or more states/islands

1. General question: if I say “family farming”, **what do you mean**?
2. Type of activities: for you, what does family farming include in terms of activities?
3. Subsistence activities: Does this include all activities that provide food?
4. Other activities: What are the other activities than the cultivation of the field that allow you to feed yourself? what should we add to our list of important activities to eat?
5. Hunting/fishing: for example, is hunting or fishing considered family farming in your opinion?

➢ *Who would like to carry out the short questionnaire surveys in his/her island and contribute to the paper?*

Interview ‘s guide

- Do you have any comment on the proposal?
- Do you have any comment on the bibliography analysis ?
- Would like to carry out the short questionnaire surveys in your island and contribute to the paper?
- Would you like to modify the questions before O. Galy submits the questionnary to the ethics committee?

Fishers & Fishing in Family Farming:

Is it concrete ? Is it anchored in local realities as well as in regional institutions?

Let’s debate now or and/or write to

Catherine Sabinot - Catherine.sabinot@ird.fr
Kim Jandot - Kim.Jandot@hotmail.fr
Séverine Bouard - bouard@iac.nc

Family Farming and Fisheries in Solomon Islands

Cultural and socio-economic context

DAMUSARU Jim Hyacinth
Department of Fisheries Studies
Faculty of Agriculture, Fisheries & Forestry
SOLOMON ISLANDS NATIONAL UNIVERSITY

Disclaimer: the views expressed in this présentations are purely those of the author and may not in any circumstances be regarded as stating an official position of the Research Executive Agency

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 873185

Outline

1. Background—SIs
2. Family farming in Solomon Islands
3. Farming and fisheries for Solomon Is
4. Management measures
5. Research ideas—forward thinking
6. Challenges & conclusion

1. Background—Solomon Is

- An archipelago of 992 islands (347 inhabited)
- Landmass ~28,000 sq km
- EEZ is 1.63 million sq km
- Reef area is 5,750 sq km
- Population~694,619 (2020), 722,392 (2022)
- Annual growth rate ~3.8% (one of the highest)
- 40% <15 yrs,58% b/w 15-64 yrs., 2% over 65 yrs.

1. Background—Solomon Is

- SIs is growing with a very young population
- ~85% of the population lives in coastal rural villages who rely on subsistence farming & fishing
- Fish consumption per capita is~33kg/yr.

Subsistence farming and fishing in Solomon Islands

2. Farmily farming—Solomon Is

- Food and nutrition security in SIs—subsistence gardens
- Farming methods – slush and burning
- Evolving of farming methods: Organic farming

Coastal farming, Choiseul Is: Photo Jim Damusaru.

Organic farming in Guadalcanal.

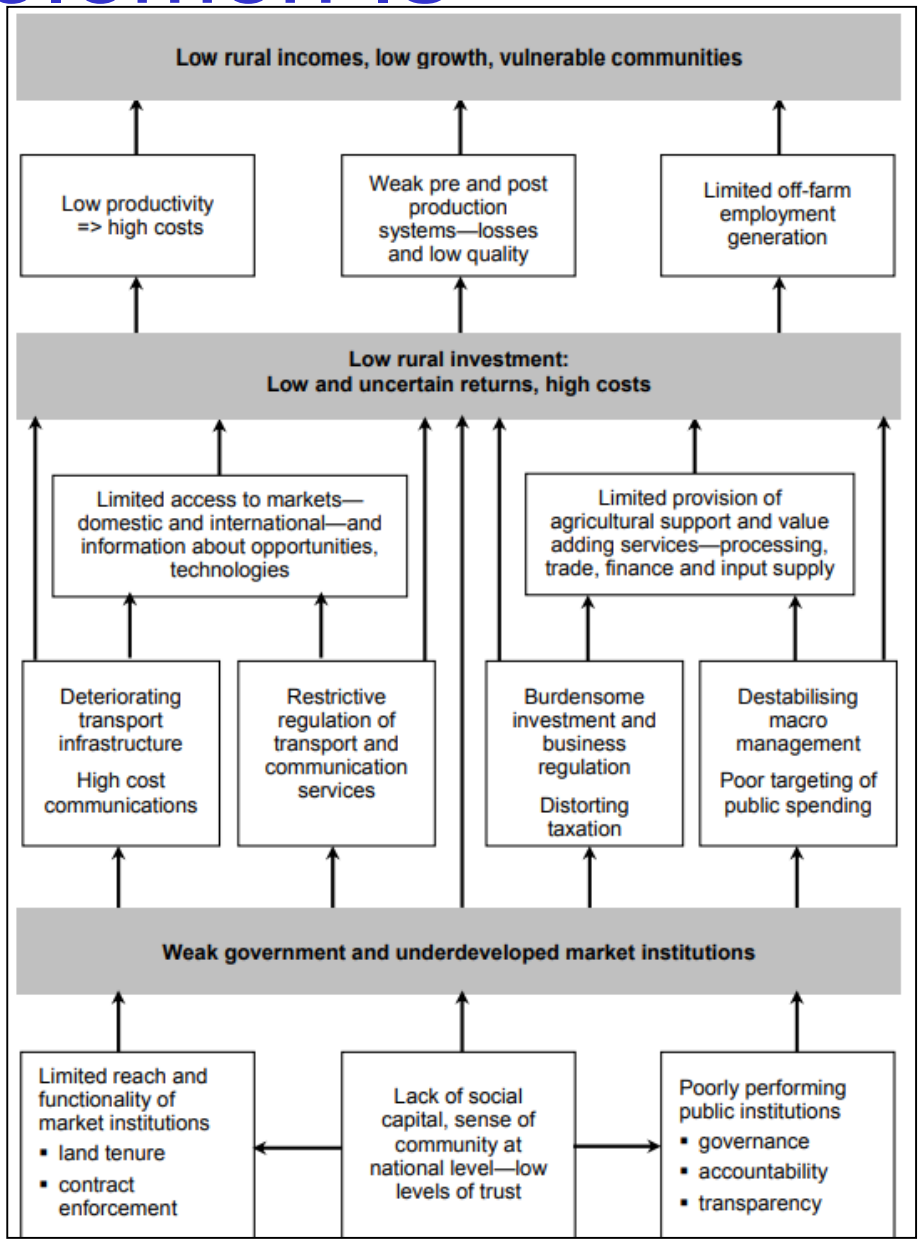
2.Family farming—Solomon Is

- Food in daily life: staple crops + fish
- Food customs at ceremonial occasions

Common island kitchen set up: Photo Jim Damusaru

2.Family farming—Solomon Is

- Policy and institutional constraints for smallholders and rural growth



Warner, 2007

3. Farming & fisheries for SIs

- Source of protein
- Source of income
  - employment
  - traditional shell money
  - totems, sacred species & paintings
- Traditional medicine
- Cultural values
- Contribute to SIs'GDP.

3.1 Inshore/coastal fisheries

- Artisanal annual production ~ $USD7M (Kile, 2000)
- Artisanal annual production ~$USD9.63M (Gillet & Lightfoot, 2002)
- Arena et al. (2015) valued inshore subsistence fisheries at SBD442 million per year ($USD 52M)

Key Export Value Species

Sea cucumber, Trochus shell, Seaweed, Shark fins, Reef fish(fillet), Aquarium fish & Spiny lobsters

3.2 Target species

Finfishes

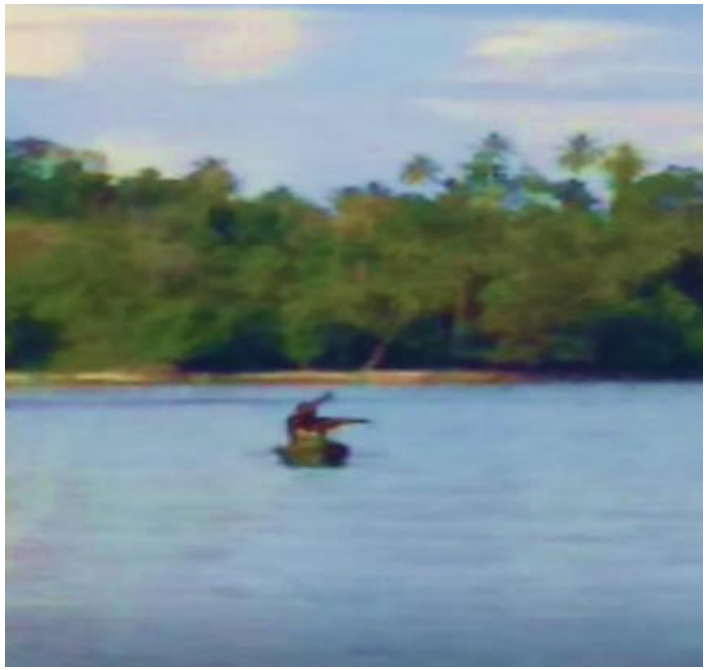
- Women—coastal finfish spp
- Children—coastal finfish spp
- Men—deep reef-fish spp & tuna

Invertebrates

- Echinoderms
- Mollusks
- Crustaceans
- Cephalopods
- Cnidarians

3.3 Methods of fishing

- Gleaning
- Spear-fishing
- Gill-netting
- Hand-lining
- Traditional methods (‘*Kura*’ & ‘*Ara*’)
- Traps
- Use of dynamite (Issue)



A community member fishing with hook and line:
Source: KAKEN Project, November 2021

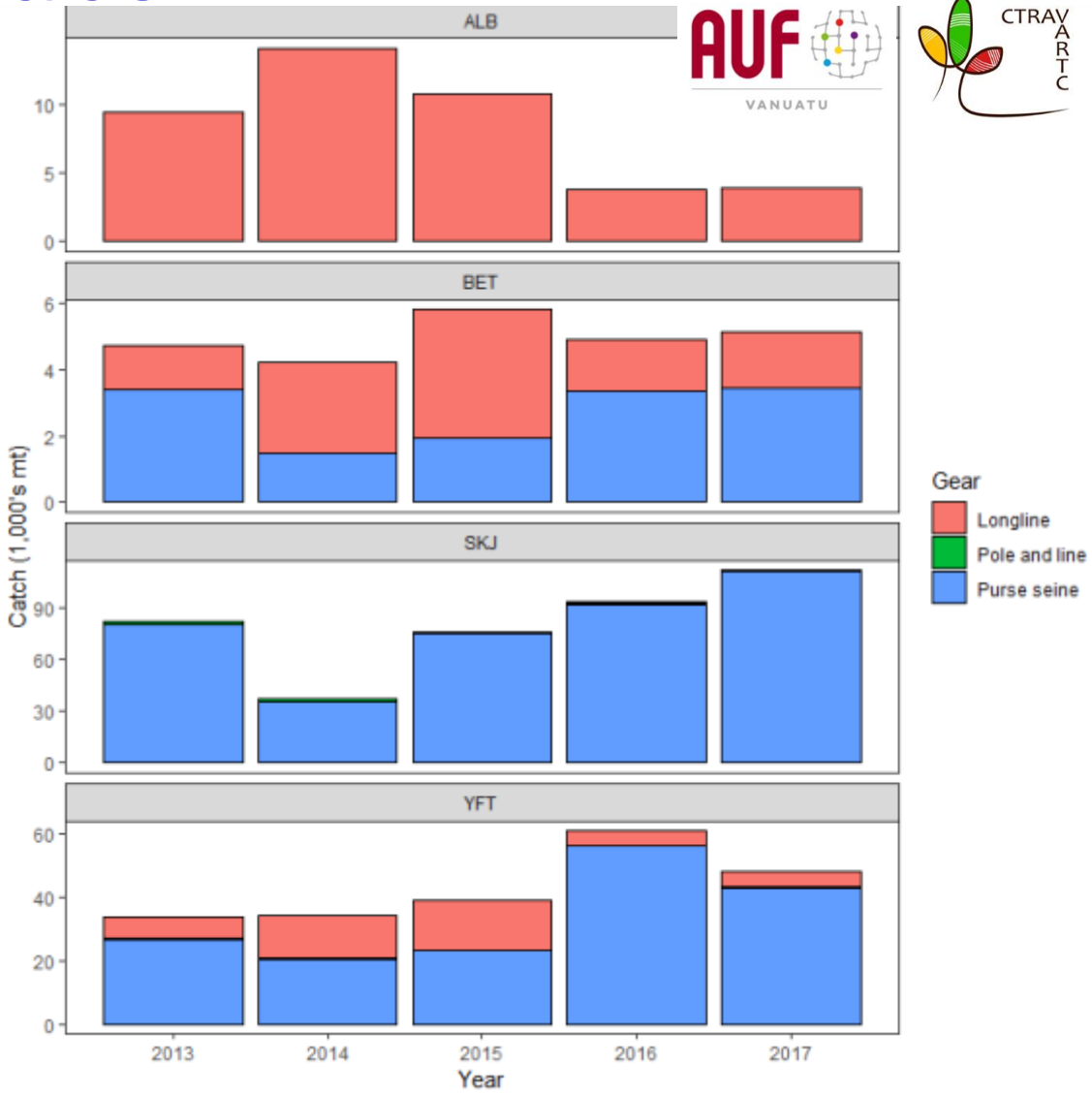
3.4 Aquaculture in SIs

- Early 90's export of farmed tiger prawns
- Focus: seaweed farming & tilapia farming.
- GIFT Tilapia–Hatchery (MFMR/SINU).
- Research: tropical aquaculture species & breeding of fry & feed manufacturing (SINU/DoFS)
- Peanut fish (*Sticopus horrens*) (MFMR).

Experimental feeding trial on *Oreochromis mossambicus*, in Semi-enclosed system, Department of Fisheries Studies (DoFS), SINU

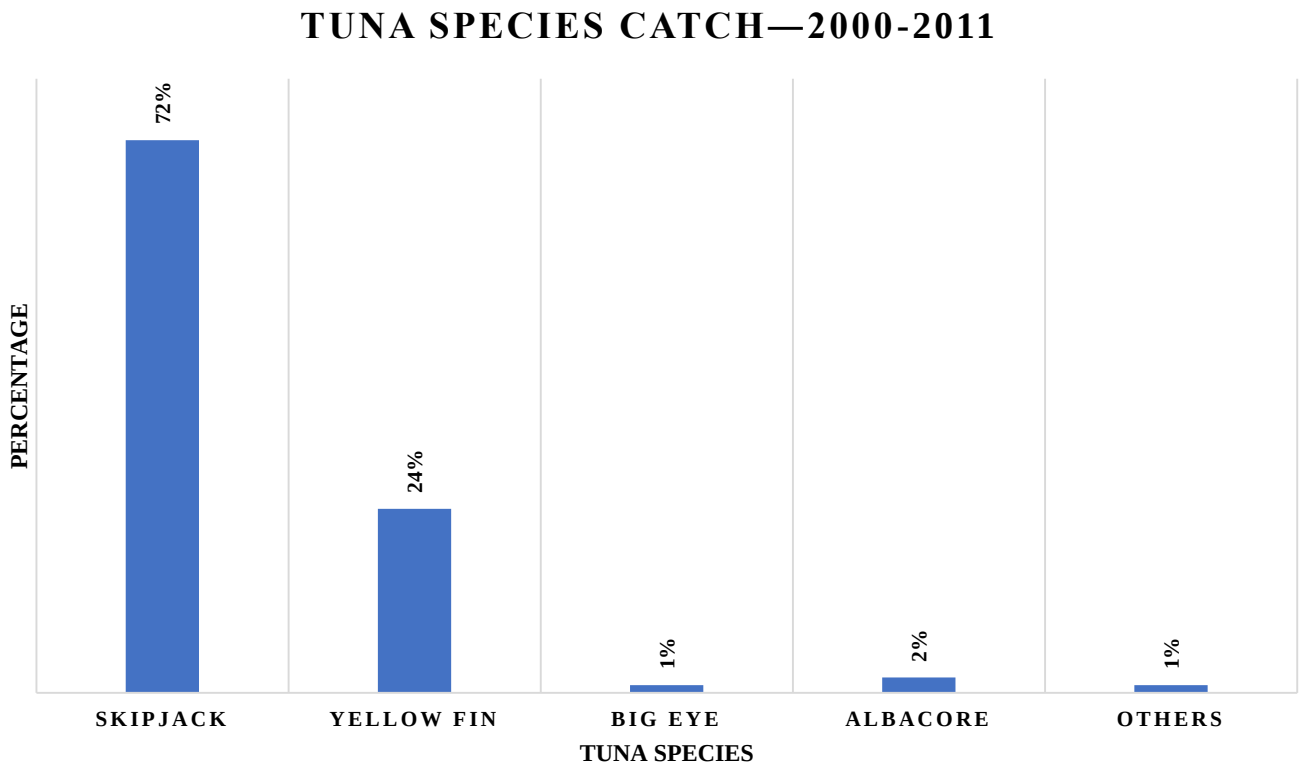
3.5 Offshore fisheries—export value

- Dominated by tuna fishing; purse-seine, longline and pole and line
- Tuna is a regional resource in Western and Central Pacific Ocean
- The annual catch of the four main tuna species (albacore, bigeye, skipjack & yellowfin) from the Pacific region averages around 2.5 million tonnes, with about 6% of this coming from Solomon Islands waters.



Annual catch estimates in Solomon Islands waters for 2013–2017 for (from top to bottom) albacore, big eye, skipjack and yellowfin tuna, for the three gear types operating in the Solomon Islands (source: SPC quoted in MFMR, 2019).

Tuna species



Tuna species catch was dominated by skipjack. MFMR, 2019

Tuna is exported as:

- Frozen
- Canned
- Smoked
- Fishmeal
- Chilled
- Loin

Export trend

- Depletion of important commercial species is very evident
- Generally effort is higher as compared to the “good old days”
- Due to high fishing pressure
    - shift from subsistence to cash base
    - increase population

Tuna is locally bottled at DoFS/SINU

Tuna Bottling at DoFS for students and fishing communities 2022.Department of Fisheries Studies

4. Management measures—Inshore fisheries

- Ban for export
- Size limits
- Gear restrictions
- Reduce fishing pressure – Aquaculture Options

  - iFADs
- Management Plans for key commercial species
- Encourage Marine Protected Areas and Managed Areas through CBRM/CBFM and EAFM approaches.
- NGO partners – Monitoring in project sites

4. Management Measures—Inshore fisheries

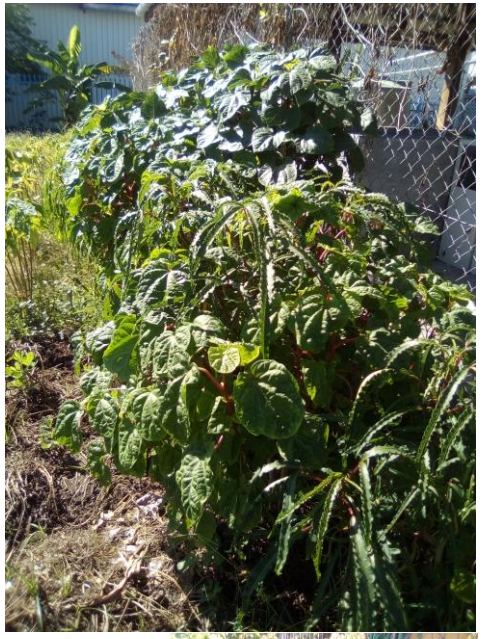
- Solomon Islands managing Tuna together with other countries as part of Regional Cooperation through: PNA (Parties to the Nauru Agreement), FFA, W
- Tuna management plan.
- Vessel Day Scheme (VDS)
- New Policy: To land tuna catches onshore
- Encourage onshore based investments (MFMR, 2019)

5.0 Research Ideas-forward thinking

Leucaena meal & **Moriga meal**

Analysis

Analysis



Analysis

Organic aquaculture and fence farming at DoFS/SINU: Photos: Jim Damusaru

References: Jung et al, 2019 & Damusaru et al, 2022 (unpublished paper)

5.1 Data collection & processing

- **Socioeconomic studies– Qualitative**
  - Household, schools census surveys
- **Physical (substrate/water/plants)**
  - Habitats, satellite imagery, mapping changes
  - Temperature, pH, nitrates, phosphates
  - Plants & animals growth performances
- Challenges
  - Translating results to actions
  - Cost, lag time in processing and producing results

Census surveys
Source: KAKEN Project, November 2018

6.0 Challenges

- Growing population—pressures on resources
- Politics (village, provincial, state, national)
- Levels of governance
- Political will to act or devolve authority to manage resources
- Lower priority for coastal fisheries (intergrated aquaculture)
- Legal framework

6.0 Challenges

- Cultural/traditional values and practices
- Non-collaborations amongst practioners
- Limited resources/opportunities at community/school levels
- What exactly are the effects of climate change?
- Pests and diseases outbreaks.

Conclusion

- Farming in SIs is threaten by growing pests & diseases due to CC (MAL, 2022)
- Synergic sustainable farming systems–Intergrated sustainable aquaculture practices
- Family farming and fisheries management; gathering data and manage the people to address issues affecting food security in Solomon Islands.

References

Ministry of Fisheries and Marine Resources, 2019, Solomon Islands National Fisheries Policy 2019–2029, A policy for the conservation, management, development and sustainable use of the fisheries and aquatic resources of Solomon Islands

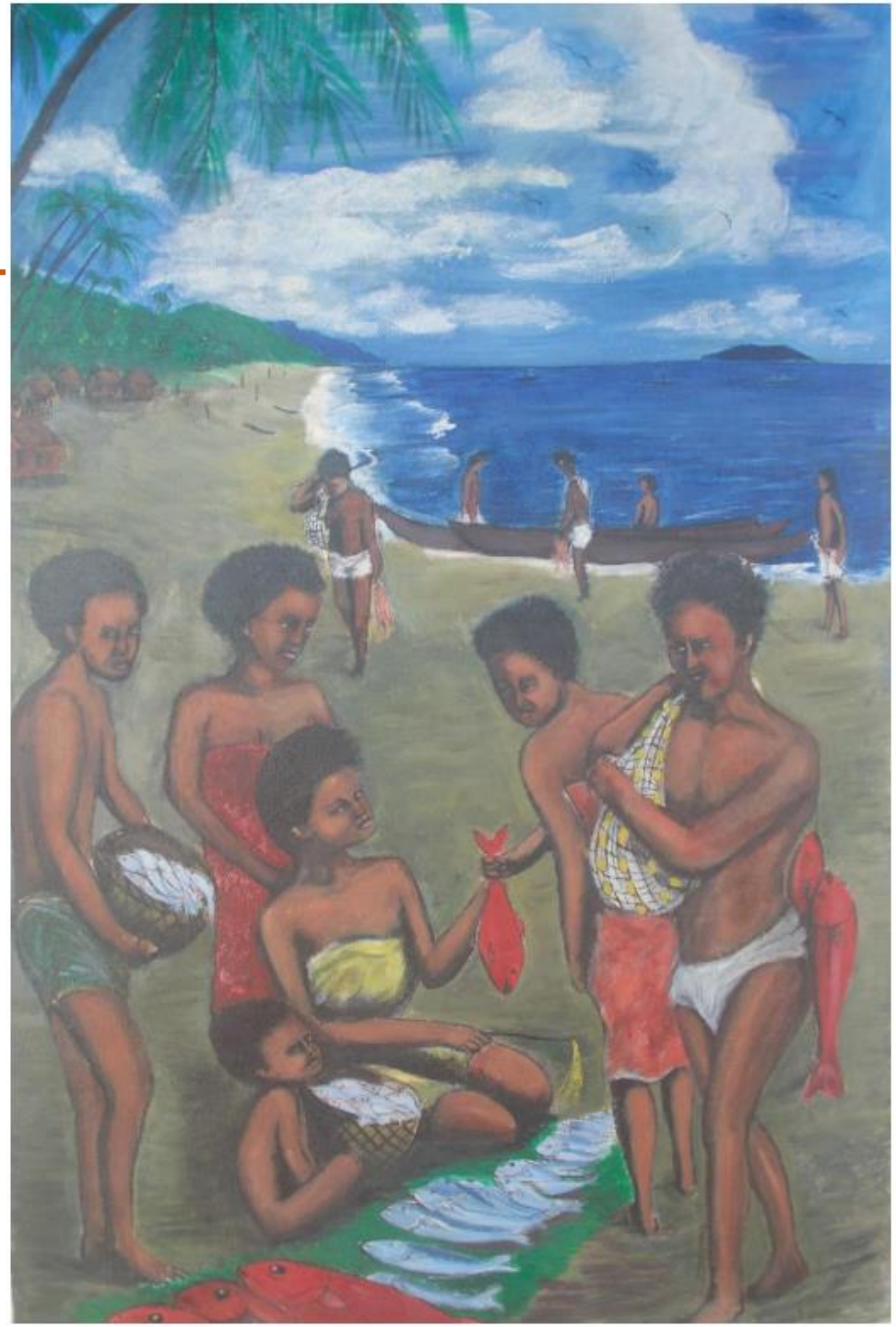
Otumawu-Apreku K., Higashida K., Yamazaki S., & Kiyama S. 2021. Artisanal fisheries in the Solomon Islands: The Wantok paradigm in West Guadalcanal. Technical Report of the 2018-2020 JSPS KAKENHI Project 18H03427: https://doi.org/10.14989/tr.afsi.2021.

Warner, B.2007. Smallholders and rural growth in Solomon Islands, Pacific Economic Bulletin Volume 22 Number 3 October 2007 © Asia Pacific Press

Jung J-Young, Damusaru JH, Park Y, Kim K, Seong M, Je H-Woo, Kim S, Bai SC, 2017. Autotrophic biofloc technology system (ABFT) using *Chlorella vulgaris* and *Scenedesmus obliquus* positively affects performance of Nile tilapia, *Oreochromis niloticus*, Algal Research 27, 259–264.

Jim Hyacinth Damusaru, Kofi Otumawu Apreku, Collin Rudolf Nobbs Gereniu, Kezyiah Saepioh. Dietary Carbohydrate for Local Strain of Mozambique tilapia, *Oreochromis mossambicus,* in Solomon Islands: Effect on growth and fry production. Department of Fisheries Studies, Faculty of Agriculture, Fisheries and Forestry, Solomon Islands National University, Honiara, Solomon Islands.[unpublished]

Thankyou



Fising leaf blong vilage pipol

Painting: Iduramoa Junior. Fishing life of village people, West Guadalcanal artisanal fishing communities.
Source: KAKEN Project, November 2018.

Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

Day 2 Stream: Ideas and methods for building a collective, shared and relevant definition and issues of Family Farming in the Pacific

Methodology for a scoping review of donor aid to support family faming and food security in the Pacific region

HAWKSLEY, CHARLES (University of Wollongong, Australie)

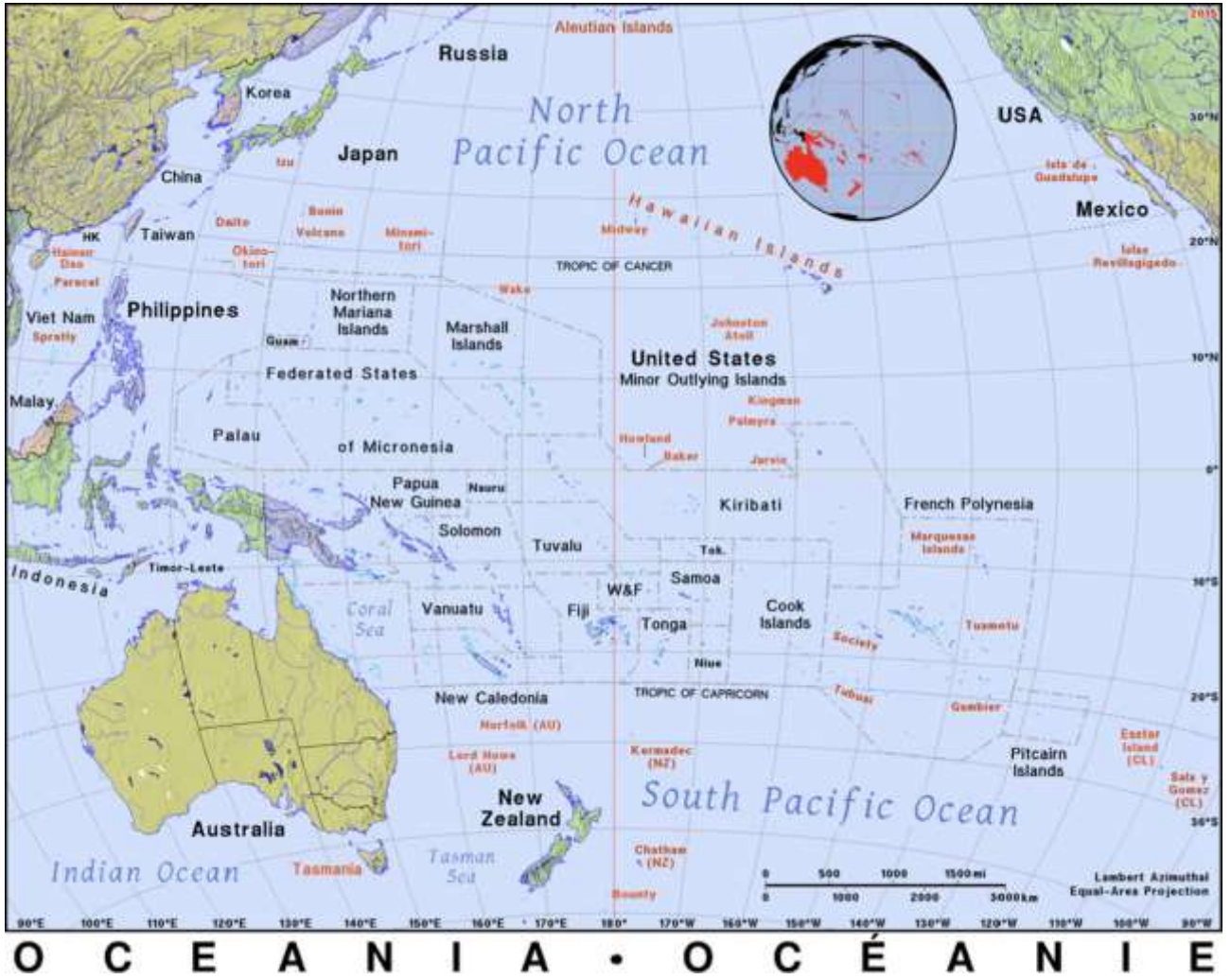
Disclaimer: the views expressed in this presentation are purely those of the author and may not in any circumstances be regarded as stating an official position of the Research Executive Agency

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 873185

Methodology for a scoping review of donor aid to support family faming and food security in the Pacific region

- Structure of Presentation— Methodological issues around:

1. Scoping review
2. Donor Aid
3. Family farming
4. Pacific Islands



Methodology for a scoping review of donor aid to support family faming and food security in the Pacific region

- What is a **scoping review**?

- Type of literature review but not critiquing quality of publications (not a **systemic literature review**)
- Scoping review finds literature and **allows for construction of general themes (ie. gender/land ownership/climate change/export/local kaikai)**

- Look at all available published literature — online — academic and 'grey' literature from agencies whose main job is not publication (governments, NGOs etc)
- **Key word searches**
- Very large number of results

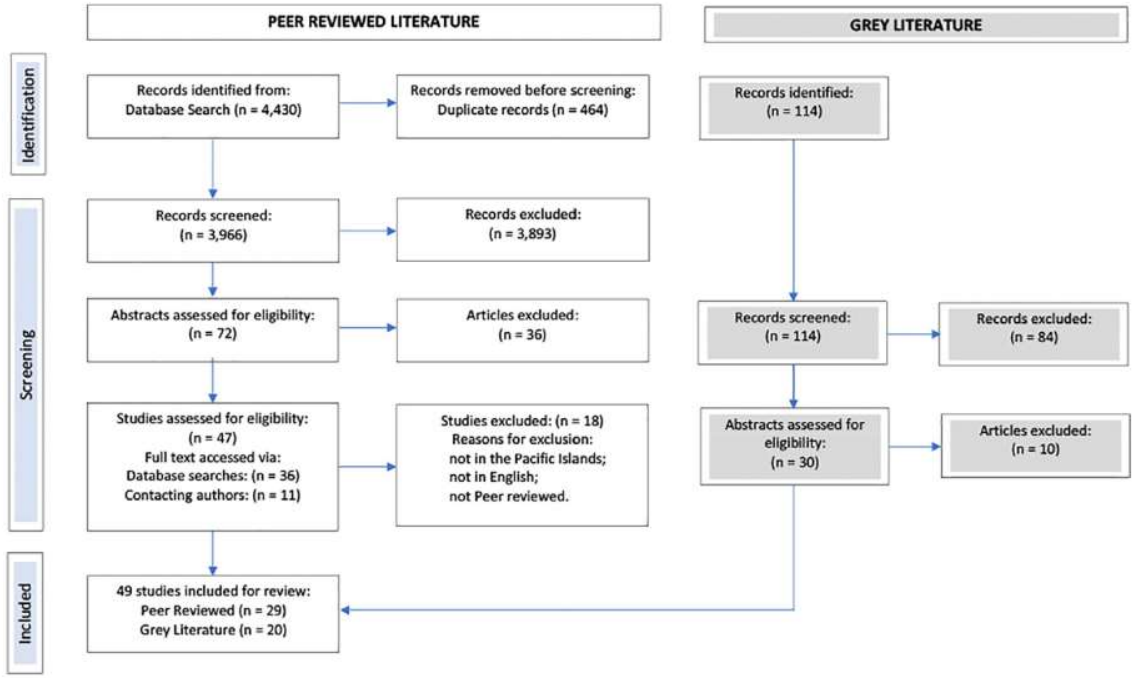


Fig 3. Study selection process. Source: Created by authors.

https://doi.org/10.1371/journal.pstr.0000009.g003

Lit review from 2022 article on Relationship between **food security** and **small holder farming** in the PICTs (22 Pacific states and territories).
(La sécurité alimentaire et **petite exploitation agricole)**
- led by Nichole Georgeou (WSU)

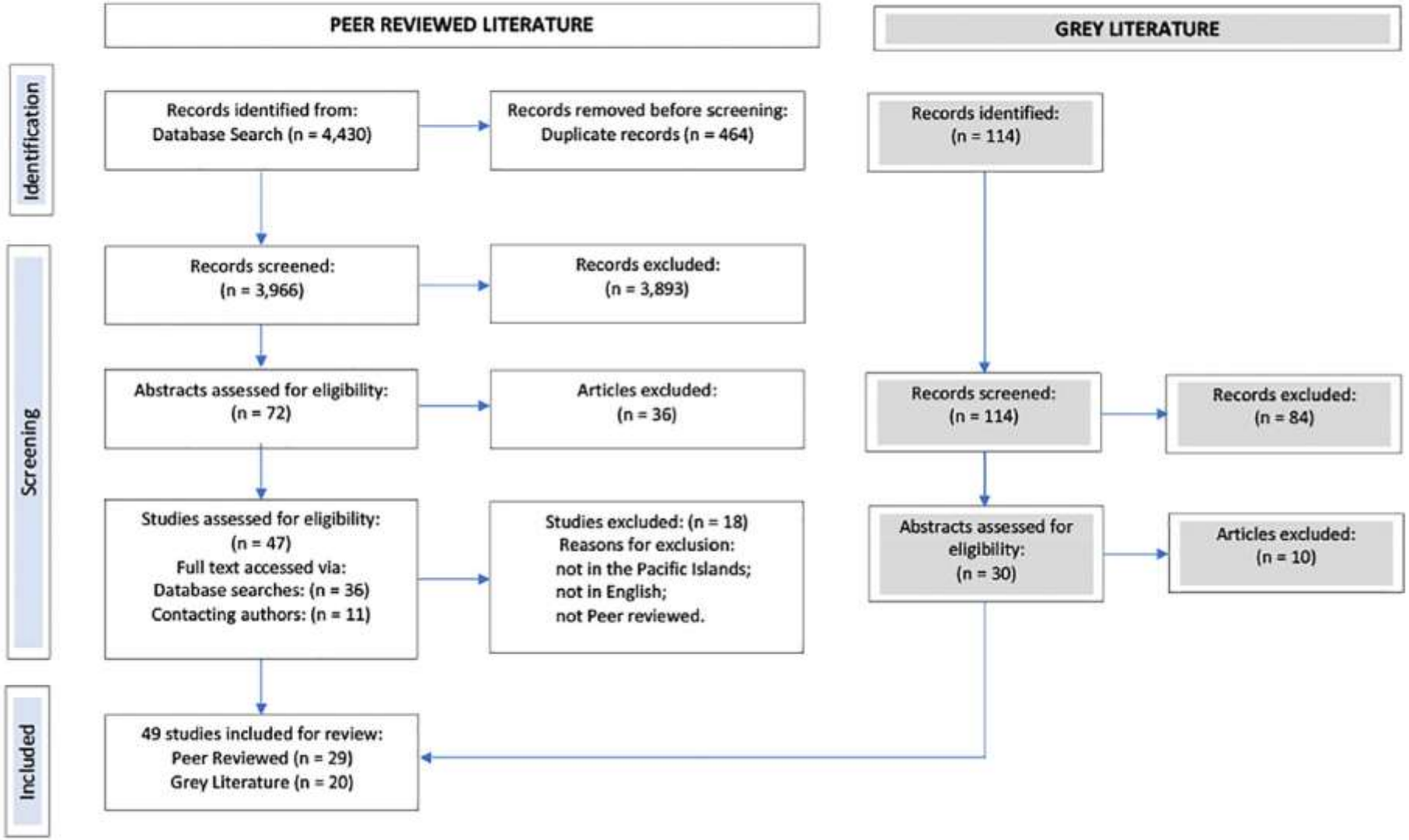


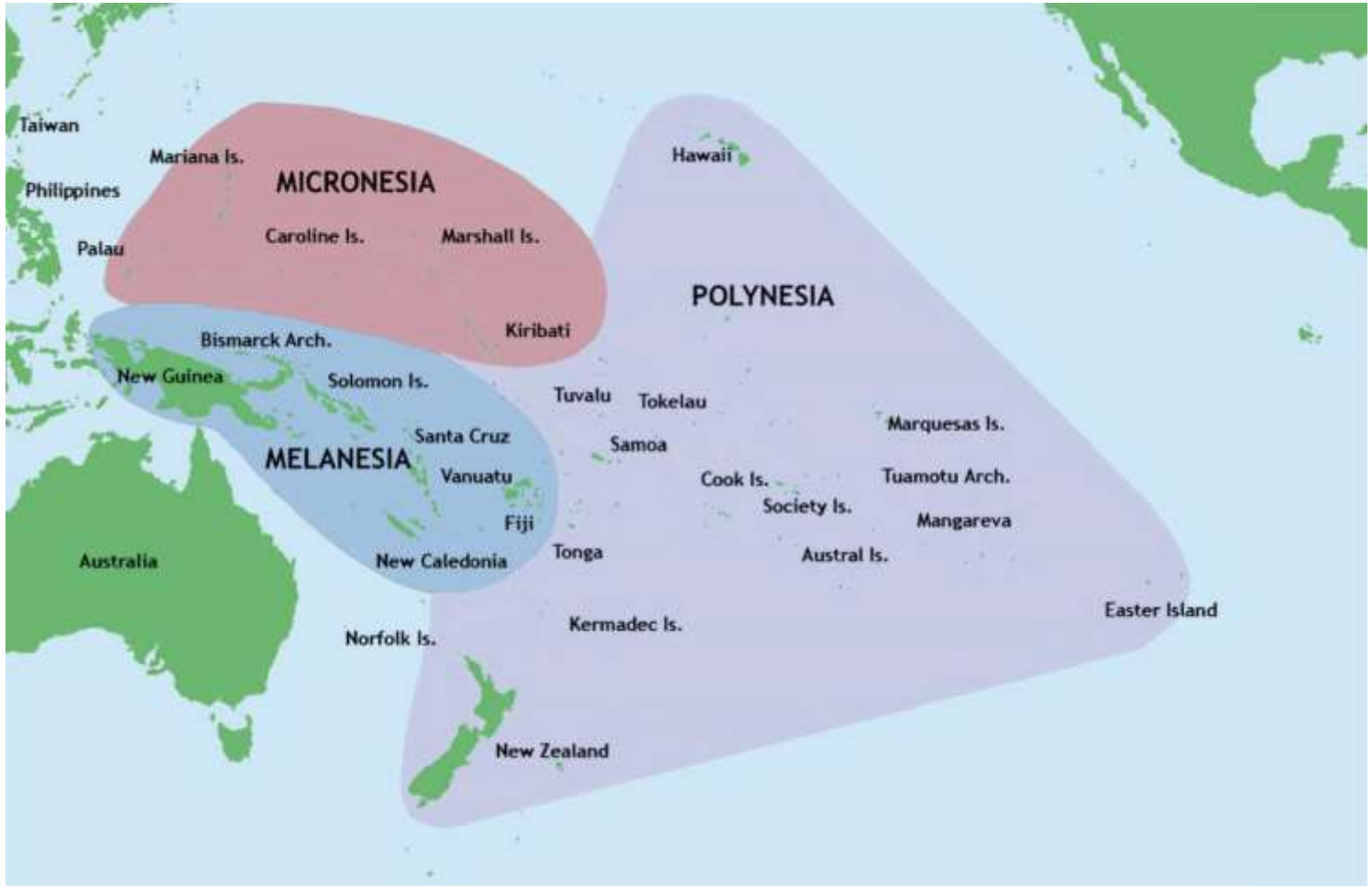
Fig 3. Study selection process. Source: Created by authors.

https://doi.org/10.1371/journal.pstr.0000009.g003

*Methodology for a scoping review of **donor aid** to support family faming and food security in the Pacific region*

- Scoping review of Donor Aid to support family farming in Pacific Islands
- Lots of academic material on aid
- Lots of government publications on aid
- Largely ***from*** governments (Aus, NZ, China, US, Japan, Taiwan, EU) so **much more Grey literature**
- Probably multiple languages—English, French, Japanese, Chinese
- *donor aid to family farming* (emphasis has been on **export agriculture**)

- Concentrate on Melanesia? (FALAH case studies)



*Methodology for a scoping review of donor aid to support **family faming** and food security in the Pacific region*

- **Donor Aid** — largely from governments (Aus, NZ, China, US, Japan, Taiwan + multilateral agencies FAO)

- Agricultural promotion/**family farming — so is this a distinction between :**
- *agriculture for export* and *agriculture for domestic consumption*

- Lots of information on **agriculture for export** (so do we include this?)
- Argument: "Contributes to small farmer food security — sale of cocoa/vanilla/ = $$$$$ = food = food security"

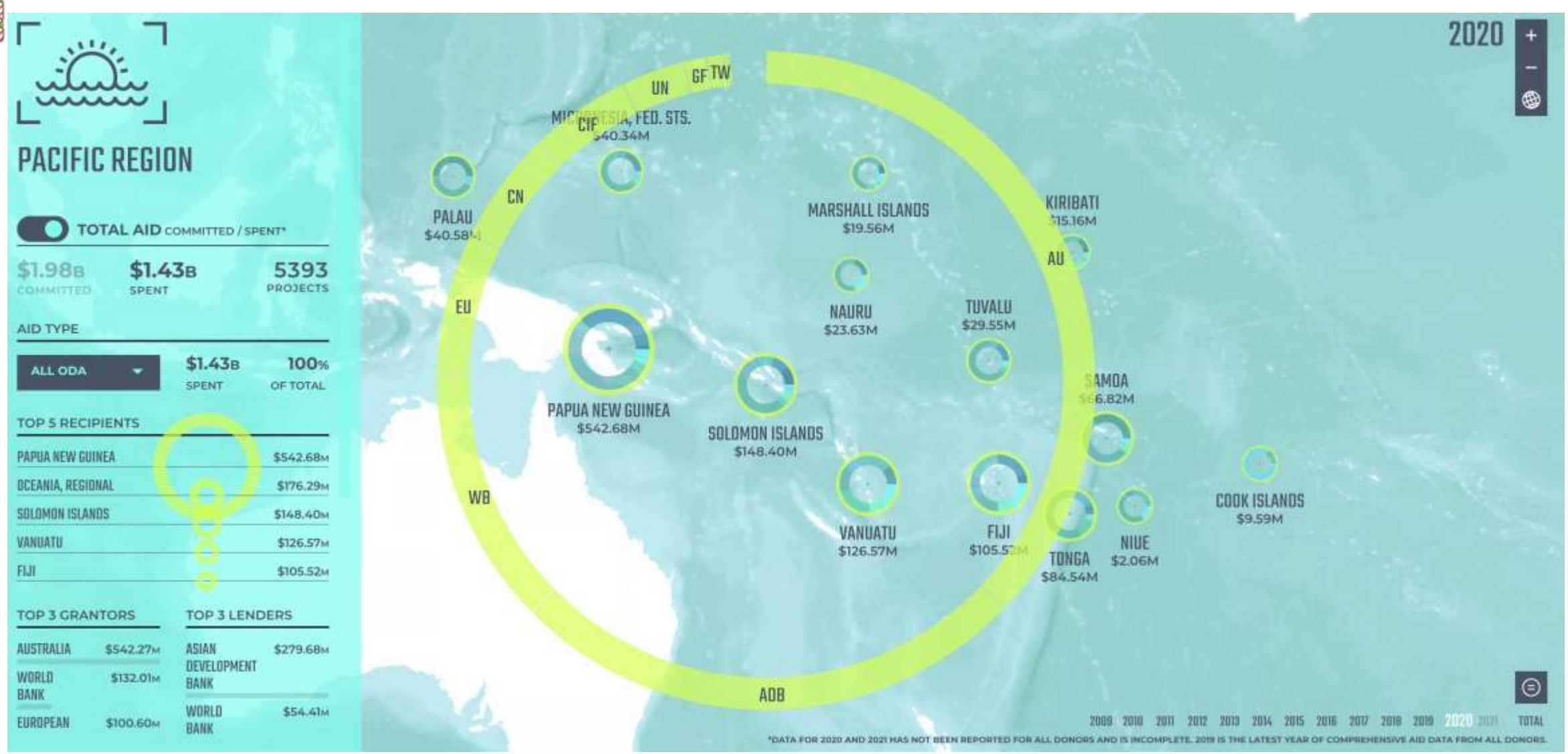
- Less on support for family farming
- Rationale: "Programs to support farmers produce for local market"
- Do we make a distinction?

- Do we include aquaculture?

- *Maybe: All aid programs aimed at small farmers and agricultural/aquacultural production*

- *So either for local market or for export*

Methodology for a scoping review of donor aid to support family faming and food security in the Pacific region



Family farming

- **“What is family farming?”**

“family and/or community farming of fresh, locally produced food that is either “integral subsistence systems” or “mixed subsistence cash cropping”,

- **NOT — the plantation mode of farming (comme ici)**

- **Small holder**
- **Normally families —F/M/enfants (households — les ménages)**
- **Consumption AND sale at market**

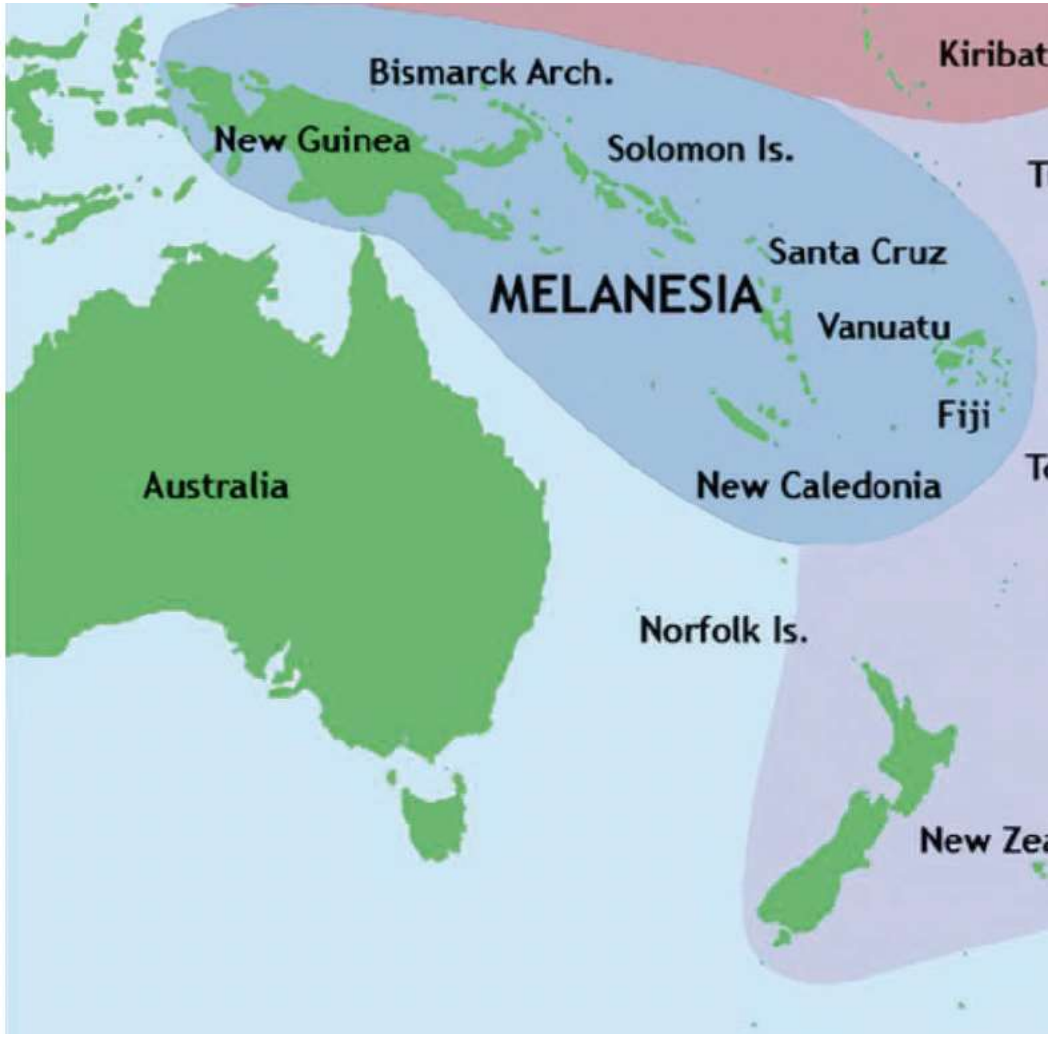
(l'apport alimentaire ET vente au marché = nutrition + $$$)

*Methodology for a scoping review of donor aid to support family faming and food security in the (**Western) Pacific region***

- Pacific Islands — scope
- Just **Melanesia?**
- Or do we want a general Pacific picture?

- Most aid goes to
- (PNG ?)
- Solomon Islands
- Vanuatu
- Fiji

- New Caledonia (France) – technically not “aid”



Methodology for a scoping review of donor aid to support family faming and food security in the Pacific region

Towards a possible scoping review

Terms:

- All FALAH Pacific case studies
- Food security
- Aid/Donor aid
- Agriculture
- Types of produce
- Aquaculture

- Lit from donors
  (Aus, NZ/EU/China/Taiwan, ADB, World Bank)
- Family farming/small farmer
- Domestic/export market

- English/French/Japanese/Chinese

The following combination of subject headings and keywords were used:
"Pacific Island." OR "Kiribati" OR "Tuvalu" OR "Micronesia" OR "Papua New Guinea" OR "Nauru" OR "Palau" OR "Solomon Island." OR "Marshall Island." OR "Samoa" OR "American Samoa" OR "Cook Island." OR "Fiji" OR "New Caledonia" OR "Tokelau" OR "French Polynesia" OR "Niue" OR "Tonga" OR "Guam" OR "Vanuatu" OR "Pitcairn Island"
OR "Wallis and Futuna" OR "Northern Mariana Island." OR "Federated States of Micronesia"
OR "Polynesia" OR "Melanesia"
AND
"food secur." OR "food insecurit." OR "food suppl." OR "food inequalit." OR "food market ." OR "food availability." OR "food access." OR "food utilisation" OR "food utilization"
OR "asset creation"
AND
"small holder agriculture" OR "agriculture." OR "fresh food" OR "farm produc." OR "fresh produc." OR "leafy green." OR "vegetable." OR "legume." OR "bean." OR "gourd." OR "nut." OR "local" OR "farm." OR "local farmer." OR "farmer market." OR "community supported agriculture" OR "sustainable agriculture" OR "fruit.".

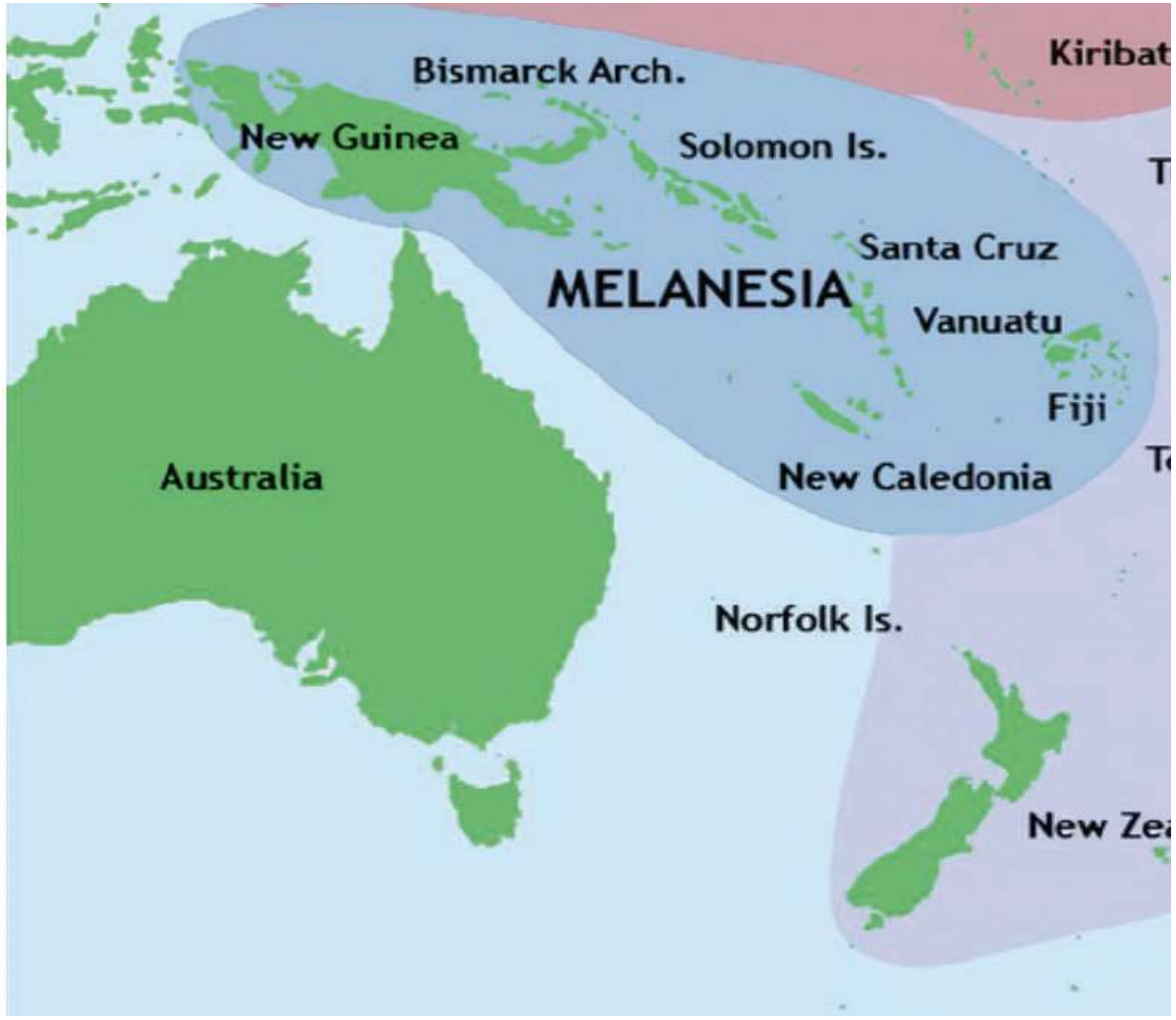
Lit review key terms from 2022 article on Relationship between **food security** and **small holder farming** in the PICTs (22 Pacific states and territories).
(La sécurité alimentaire et **petite exploitation agricole)**
- led by Nichole Georgeou (WSU): English only

*Methodology for a scoping review of donor aid to support family faming and food security in the **Western Pacific region***

- Georgeou et. Al 2022 Scoping review of family farming and food security in PICTs (had some aid donor publications)

- **Way forward:**
  Nichole and team at WSU — lots of experience
- Colleagues at UNC (French)— Practice workshop in Australia
- **Outcome: Combined English French (bilingual) research on donor aid support for family farming and asset creation in Melanesia**
- Gaps in Japanese and Chinese language
- Research assistants with language skills

- **Any Questions?**
- **Merci beaucoup/Tanku Tumas/Thank you**



Protocol Strengths weaknesses and resilience for family farming, lifestyle and health in Pacific islands

Dr Olivier Galy (UNC)
Pr Jean-Marie Fotsing (UNC)
Dr Severine Bouard (IAC)
Pr David Raubenheimer (USYD)

Disclaimer: the views expressed in this presentation are purely those of the author and may not in any circumstances be regarded as stating an official position of the Research Executive Agency

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 873185

Research project
Scientific context

General context

PICTs:

- Rapid socio-economic transitions
- Climate change and future consequences
- Sanitary risks

→ HIGH **VULNERABILITIES**

Context

These **vulnerabilities** are progressively transformed in pandemics including :
*obesity
*undernutrition
*climate change
*sanitary risks

⇒ Represent the **Global Syndemic** that affects most people

(Swimburn et al. 2019)

A **syndemic**, or synergy of epidemics, co-occur in time and place, interact with each other to produce complex sequelae, and share common underlying societal drivers

Context

*So **different models of sustainability society are necessary to understand**

*__It is a priority for scientists__ to think about a problem and/or a solution with different expertise

*Thinking both the **global and the specific is necessary** because singularity of each environment is the way to solve specific problem

*AND in the same time, **common frameworks** to do research and knowledge transfer is a key point to learn about populations in specific socio-economic environment in different countries.

Aim

To reach this objective, **working with family farmers, custom, governments, researchers, inter and non-governmental institutions** from different perspectives will help to learn from each other and offer locally fitted sustainable interventions.

So, the aim is **to survey stakeholders about FF, lifestyle and health to contribute towards identifying socially and politically sustainable routes to well being** with improved cultural, health, environmental and economic outcomes **and identify priority areas for FALAH research program.**

Protocol

25,26,27 Oct 2022
VANUATU Workshop

REDCap
Research Electronic Data Capture

22,23,24 Nov 2022
SYDNEY Workshop

Develop the paper and present results at the Sydney workshop

2023

THE LANCET *Regional Health*
Western Pacific

Participants:

***95 FALAH members of consortium + other researchers with expertise related to FALAH to participate (effective contribution of a FALAH member=co-author)**

***the FALAH focal point (NC, VAN, FIJI, SI, PNG) manage participants with a minimum of:**

5 family farmer group **(families and households) per country**

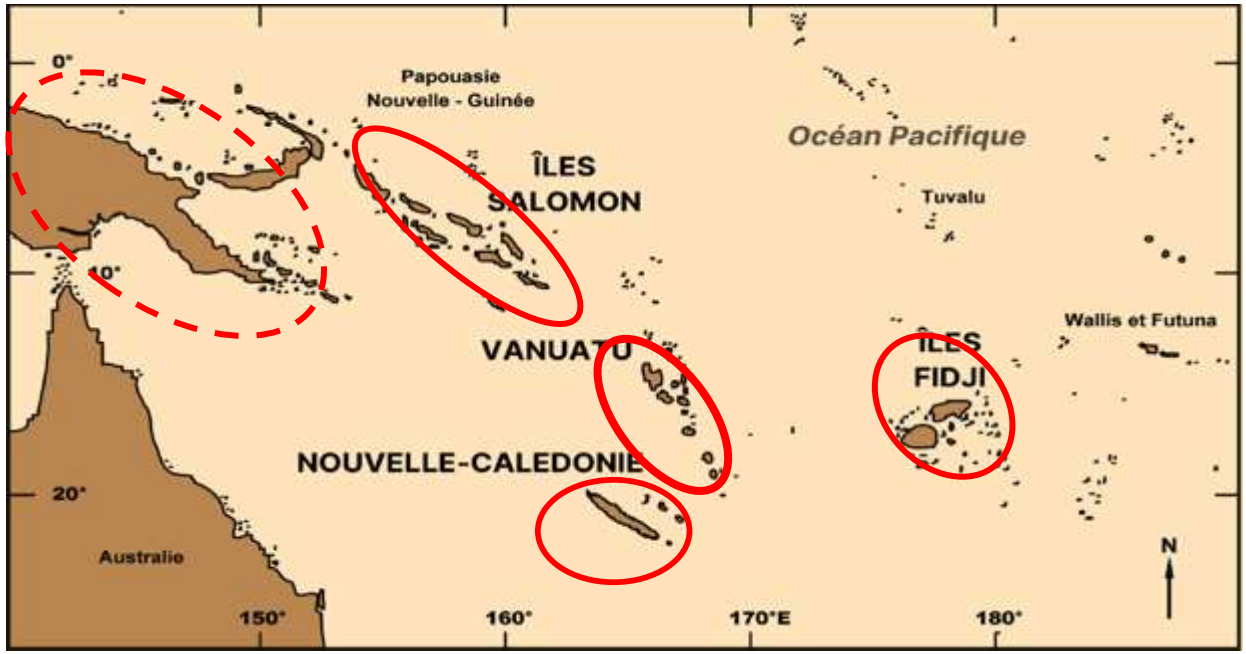
5 community leader group **(customary authorities, associations, clusters, spirituality,…) per country**,

5 policy maker group **(districts, cities, provinces, governments, …) per country**

What each team has to do:

Share the questionnaire in the scientific network

Identify families, community leaders and policy makers group



Protocol

25,26,27 Oct 2022
VANUATU Workshop

22,23,24 Nov 2022
SYDNEY Workshop

March 2023

Survey addressed to family farmers, community leaders, and policy makers

Enter the Survey Access Code

Start the survey by following the steps below.

1.) Go to this web address:

https://redcap.unc.nc/surveys/

2.) Then enter this code:

RTMEEA7MY

Survey addressed to experts on Pacific region

Enter the Survey Access Code

Start the survey by following the steps below.

1.) Go to this web address:

https://redcap.unc.nc/surveys/

2.) Then enter this code:

DN7M3E7EP

Publications rules & co-authoring

1- Open access for all the publications

2-Acknowledgments:

« This study has been funded by the European Commission through the RISE program (Research and Innovation Staff Exchange) H2020 – MSCA – RISE – 2019 Grant Agreement: 873185: FALAH: "Family farming, lifestyle and health in the Pacific"

3-What is an author?
https://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html

The ICMJE recommends that authorship be based on the following 4 criteria:
-Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
-Drafting the work or revising it critically for important intellectual content; AND
-Final approval of the version to be published; AND
-Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Survey addressed to family farmers (families and households), community leaders (customary authorities, associations, clusters, spiritual,…)
and policy makers (districts, cities, provinces, governments, …):

Q1-Your Country: NC, Fiji, Vanuatu, Solomon Islands, Papua New Guinea, etc.

Q1bis- You are: A male, A female, Not specified

Q2-In this survey, you consider to represent:
-family farmer group **(families and households)**,
-community leader group **(customary, spirituality, associations, clusters,…)**,
-policy maker group **(districts, cities, provinces, governments, ONG, inter-governemental institution,…)**

PART 1: Family farming

Q3.1- According to you, what are the big challenges of your society that you are facing regarding family farming?

Q3.2-According to you, what are the causes?

Q3.3-What are the possible ways to manage the situation for positive change?

Q3.4-What means do you think are most missing/needed to understand the situation and manage the situation?

PART 2 : LIFESTYLE Definition: *Lifestyle of a person can be understood as the combination of daily physical activity, diet and sleep behaviors that are influenced by social, spatial and temporal components in which the person lives*

Q4.1-According to you, what are the big challenges of your society that you are facing regarding lifestyle?

Q4.2- According to you, what are the causes?

Q4.3-What do you think about the possible ways to manage the situation for positive change?

Q4.4 -What means do you think are most missing/needed to understand the situation and manage the situation?

Survey addressed to experts on Pacific region (academics, scientists, engineers, …) :

Q1-Your Country:

Q1bis- You are: A male, A female, Not specified

Q2- You are: researcher, phd student, post doc, engineer, academic,…

PART 1: FAMILY FARMING

Q3.1- According to you, what are the biggest challenges facing society with regard to family farming?

If you are involved in different pacific countries, please be precise it for each country.

Q3.2- According to you, what are the causes?

If you are involved in different pacific countries, please be precise for each country.

Q3.3- What do you think about the possible ways that could be implemented to manage the situation for positive change?

If you are involved in different pacific countries, please be precise for each country.

Q3.4- What means do you think are most missing/needed to understand the situation and manage the situation?

If you are involved in different pacific countries, please be precise for each country

PART 2 : LIFESTYLE

Q4.1- According to you, what are the biggest challenges facing society with regard to lifestyle?

If you are involved in different pacific countries, please be precise for each country.

Q4.2- According to you, what are the causes?

If you are involved in different pacific countries, please be precise for each country.

Q4.3- What do you think about the possible ways that could be implemented to manage the situation for positive change?

If you are involved in different pacific countries, please be precise for each country.

Q4.4 - What means do you think are most missing/needed to understand the situation and manage the situation?

If you are involved in different pacific countries, please be precise for each country.

Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

Hello fellow Fala colleagues, I am happy to represent SINU FALA team on this family farming research field work in the Solomon islands

Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

Title: Family farming research field work in the Solomon islands; a case study on rural Makira community & urban Honiara schools/communities

Joshua, Leeroy

(Sinu fala team rep)

Disclaimer: the views expressed in this presentation are purely those of the author and may not in any circumstances be regarded as stating an official position of the Research Executive Agency

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 873185

Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

- **ACTIVITIES**

i. Identifications of study sites

- ❑Urban schools/communities
- ❑Peri-urban schools/communities
- ❑Rural schools/communities

ii. Design questionnaire

- ❑ capture farmers/farm production approaches to food security in terms of
  - i. Production systems(subsistence, commercial or mix mode)
  - ii. Type of vegetables cultivated- influence diet pattern/nutrition

iii. Field data collections

- ❑farmers/farm postharvest practices at farm gate & along supply chain till reach market centres
- ❑Farm produce food loss

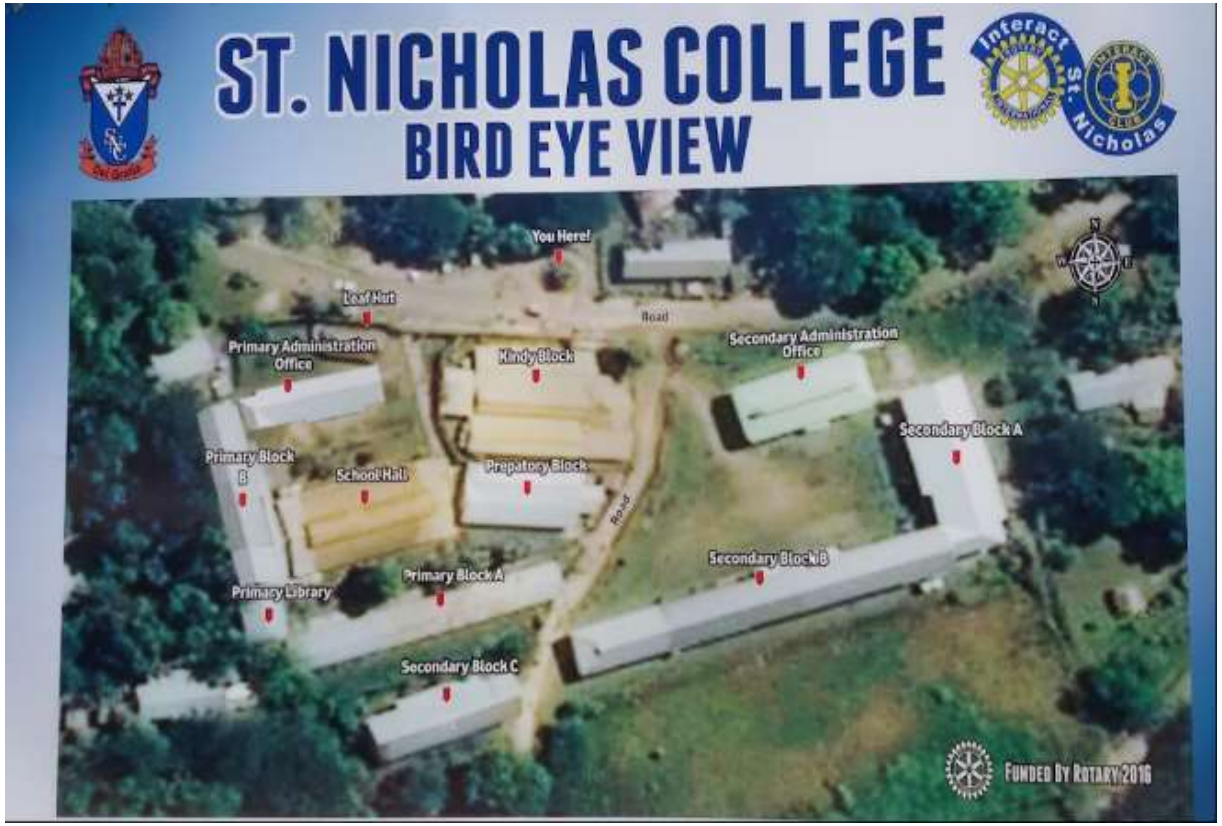
Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

Sample sites:

1. **Urban schools are:**
   - St Nicolas college – secondary school
   - Kukum SDA primary school



Urban Day school without farm on site

Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

1. Peri-urban schools

- Betikama Adventist College
- Burnscreek community primary school

Boarding School with farming area

Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

3. Rural schools

- St Joseph Tenaru Catholic secondary
- Ruavatu community high school

Boarding school with farming area

Challenges???

Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

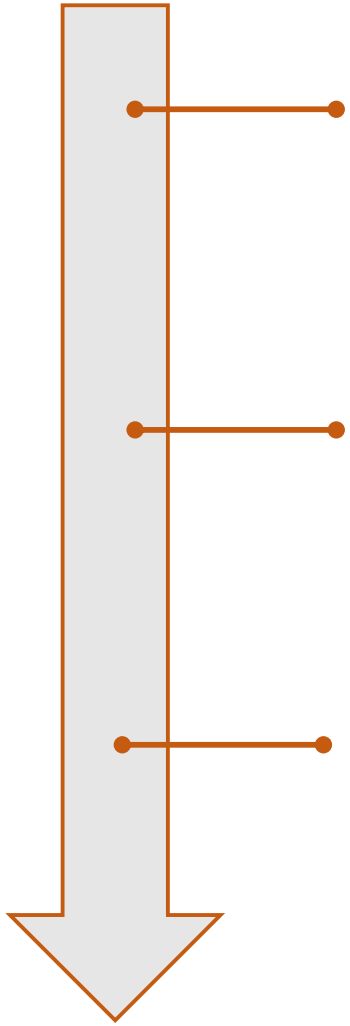
National University of Vanuatu, Port Vila

The end

“Methods, timeline for research with schools, communities, students”

Dr Olivier GALY (UNC)
Mr Guillaume WATTELEZ (UNC)
Mr Pierre-Yves LE ROUX (UNC)
Mr Jonas BROUILLON (IAC)
Dr Severine BOUARD (IAC)

Summary

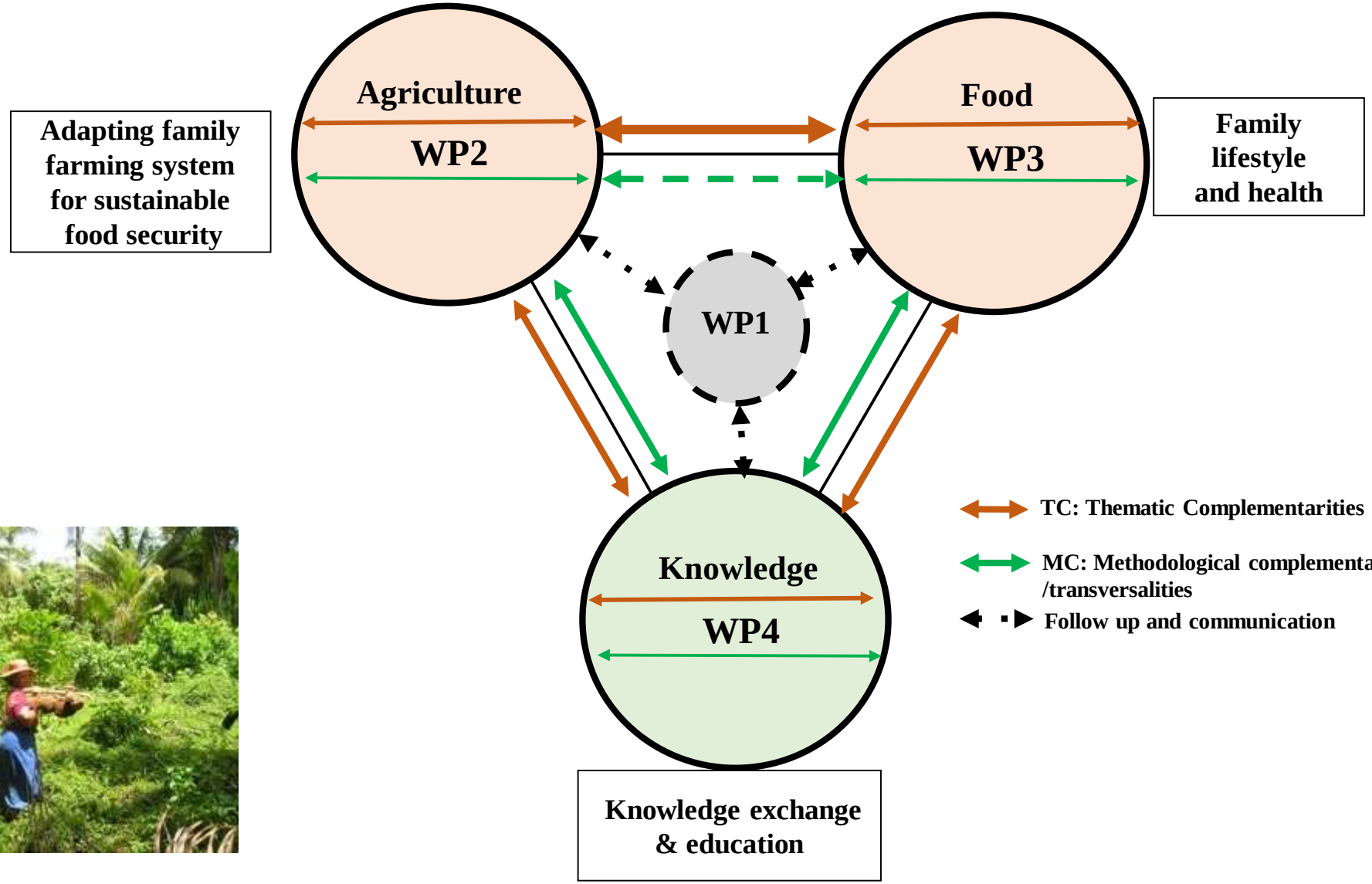


WP 2, 3, 4 and research questions

Tools, methods and metrics

Timeline for the fields

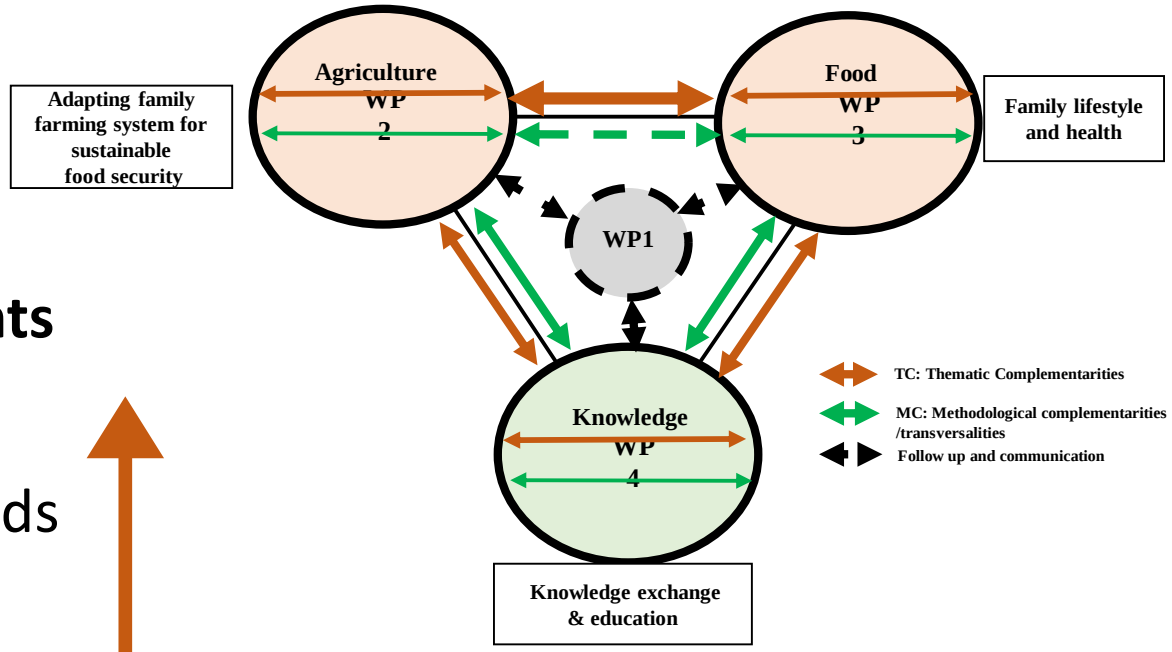
Framework


Adapting family farming system for sustainable food security
Agriculture
WP2
Food
WP3
Family lifestyle and health
WP1
Knowledge
WP4
Knowledge exchange & education
TC: Thematic Complementarities
MC: Methodological complementarities /transversalities
Follow up and communication

WP 3, WP4 and research questions

WP2	**2.1 Gather and summarize knowledge on cropping practices, consumption, innovation and the dynamics of family farming** **2.2 Improve understanding of how family farming functions through ecological, economic, sociological and spatial dimensions and how it adapts to the environment**
WP3	**3.1 Examine the effects of family farming on lifestyle and its impact on the health and well-being** **3.2 Explore diet and physical activity in families practicing family farming** **3.3 Analyze inter-generational benefit on family farming lifestyle**
WP4	4.1 Compare traditional family farming practices, its adaptation to the environment and identify best practices to disseminate **4.2 Examine the role of school in promoting food education, physical activity, and changing dietary habits** 4.3 Share new knowledge to develop sustainable intervention strategies that can help people from other regions 4.4 Accumulate, cross and share traditional and scientific knowledge on small-scale farming and eating habits to establish production and consumption strategies adapted to the socio-cultural context.

FALAH framework
Components



Social components

Children/School
Families/Households
Communities
Public places

Spatial components

Rural
Peri Urban
Urban

Areas

Temporal components

Seasonal aspects
Inter generational
Semi longitudinal

Ethics

The Ethics Consultative Comittee of New Caledoina validated FALAH project in November 2020

Avis 2020-11 002 rendu par le Comité Consultatif d'Éthique de Nouvelle-Calédonie pour les Sciences de la Vie et de la Santé (CCE NC SVS) en vue de la mise en place du projet :

FALAH - Promouvoir et redynamiser l'agriculture familiale en Océanie afin d'améliorer l'alimentation des familles

Présenté par Olivier Galy

Lors de l'assemblée plénière du CCE NC SVS du 23 novembre 2020

Le Comité Consultatif d'Éthique de la Nouvelle-Calédonie pour les Sciences de la Vie et de la Santé s'est réuni ce **23 novembre 2020**, en formation régulière dans les conditions prévues par l'article 59 de la délibération modifiée 228 du 13 décembre 2006, pour donner son avis sur le projet **FALAH** dans le cadre de la délibération modifiée 228 du 13-12- 2006, art. 52, 2nd alinéa, « *ce comité a pour mission d'émettre un avis et de rédiger des recommandations sur les questions éthiques soulevées par les nouvelles technologies, la recherche et les progrès de la connaissance dans les domaines de la biologie, de la médecine et de la santé* », et, art. 56 « *le comité.....peut être saisi par.....un établissement public ou privé, une fondation ou une association. Établissements, fondations ou associations doivent avoir pour objet principal la recherche, le développement technologique médical ou le progrès de la connaissance dans les domaines de la biologie, de la médecine et de la santé....* ».

Projet

Par correspondance en date du **21 octobre 2020**, **Olivier Galy** confirme saisir le CCE NC SVS du projet suivant : **FALAH - Promouvoir et redynamiser l'agriculture familiale en Océanie afin d'améliorer l'alimentation des familles.**

Le projet FALAH, qui sera réalisé par l'Université de Nouvelle-Calédonie, a pour ambition de trouver des solutions innovantes pour l'alimentation.

Décision

Le projet est conforme aux critères éthiques et les réserves émises en séance plénière ont fait l'objet d'un correctif qui donne satisfaction. Il n'y a donc pas d'opposition à sa validation par le CCE NC SVS.

L'avis donné au projet est favorable.

Le présent avis, communiqué à **Olivier Galy**, et au Gouvernement de la Nouvelle-Calédonie sera par ailleurs expressément mentionné au Journal Officiel de la Nouvelle-Calédonie, et intégralement cité sur le site internet de la DASS NC. Il est toutefois rappelé que les avis fournis par notre Comité ne sont pas ceux d'un Comité de Protection des Personnes (CPP) dont le CCE NC SVS n'a pas les attributions.

Pour le Comité Consultatif d'Éthique de Nouvelle-Calédonie pour les Sciences de la Vie et de la Santé,

Nouméa, le 17 février 2021

Le Président,

Docteur Frédéric TOUZAIN

Tools, methods & metrics

For WP2
&
WP3

Antony N yalkabong, an enumerator from the Ghana study team, demonstrates during a training session how participants should wear the accelerometer.

Each participant is allocated an ID number - Data in the platform are de identified

Theme	Level of observation	Variables	Tools	Methods	Units	Time of observation
Family farming and livelihoods	**Members of the household**	Farming-related activities of each member	Questionnaire/ interview	mixed	N/A	1- Data collected at home in the family; 2- time scale: one day per year
	Household	Land use/cultivated area	Questionnaire	Quantitative	sq meters or acre	
		Agricultural equipment, fishing gear	Questionnaire	Quantitative	local currency & USD	
		Crop, Livestock production, fisheries, hunting	Questionnaire	Quantitative	kg	
		Destination (auto-consumption, gift, sell)	Questionnaire	Quantitative	local currency & USD, kg	
		Crop production, livestock, hunting and fishing costs	Questionnaire	Quantitative	local currency & USD, kg	
		Monetary incomes	Questionnaire	Quantitative	local currency & USD	
Nutrition	**Members of the household**	Diet & nutrition	24hr dietary intake survey (Digital)	Mixed	Categories, % of diet, mg, g, calories	1- Data collected at home in the family ; 2- time scale is of one day (can be repeated over the year)
		Diet & nutrition	Food Frequency Questionnaire	quantitative	portions, unit/week	
		Assessment of processed food consumed	NOVA classification	Mixed	% in each NOVA category	
	Household	Number and time of meals	Questionnaire	Quantitatif	number of occurrence	
	Community	Food environement (shops selling food)	Questionnaire/existing database	Quantitatif	NOVA classification for food available in shops	
Physical activity	**Members of the household**	Physical activity (Type of activities, mode of transportation etc…) and sleep	Questionnaires, Wrist Accelerometry, heart rate sensors and GPS	Mixed	Nature of activities, duration (min), frequency, time (min/day), Heart rate variability (day), Distance (m or km/day) and area of daily activities (m2/day)", sleep duration (hr) and quality	1- Data collected at community level, 2- Time scale if one year"
	Household	Physical activity equipment	Questionnaire / interview	Qualitative	Number and nature of equipment	
	Community	Land use	Questionnaire / interview	Mixed	Equipment / natural and built environement with regards to physical activity	
Descriptive variables & Health outcome variables	**Members of the household**	Descriptive variables: Age, gender, education, occupation	Questionnaire/ interview	mixed	year, N/A	1- Data collected at home in the family 2-time scale: day of measure
		Health questionnaire	Questionnaire	Qualitative	N/A	
		Body composition	Bioimpedancemetry/scale	Quantitative	Kg, Body Fat %, Total Body Water %, Muscle Mass, Physique Rating, Bone Mineral Mass, Basal Metabolic Rate, Metabolic Age, Body Mass Index, Visceral Fat	
		Body height	Height gauge/ruler	Quantitative	cm	
		Well being	Well being index	Quantitative	index	
		Waist	Measuring tape	Quantitative	cm	

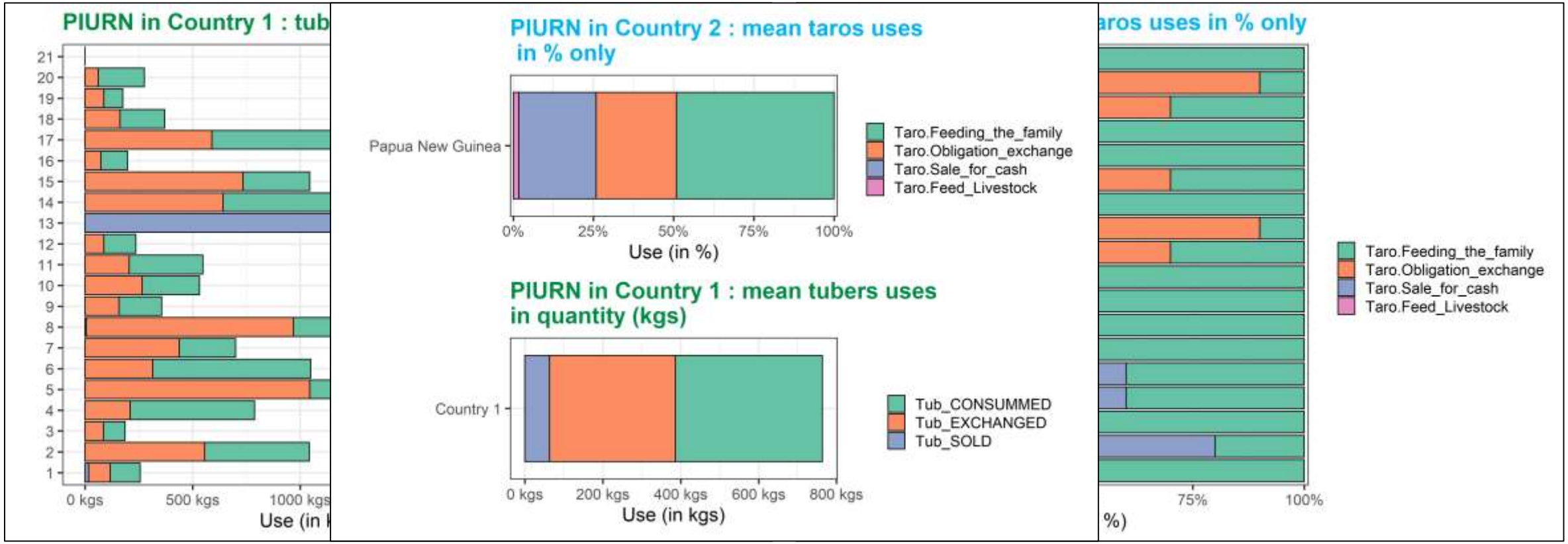
Tools, methods and metrics

Tools and Data management

Examples of issues to avoid : similar questions but with :

- Differents units betwen countries (kilograms vs percentages).
- Differents variables names.
- Differents ways to construct the database (all tubers vs each tuber type).

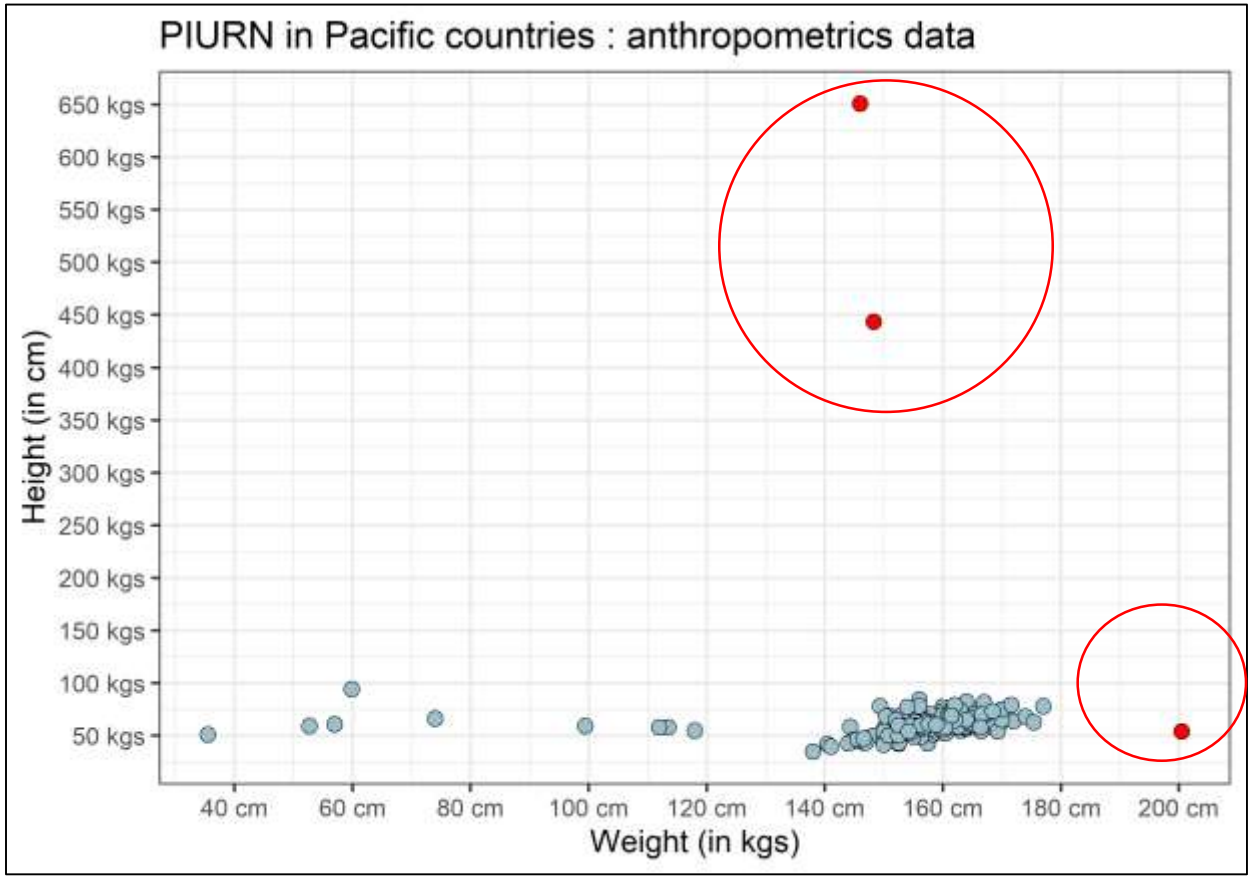
So comparisons possiblities betwen the 2 countries are limited !



Tools, methods and metrics
Tools and Data management

Another example of issues to avoid : anthropometrics data

- Outliers data for height (cm) and weight (kgs).
- Errors in data entry.
- In some cases, not the same units during the data entry.



Tools, methods and metrics

Tools and Data management

- To avoid these kind of issues, permit database construction and **standardization**, we will use the **Redcap** software for Data collection.
- Permit **offline data collection** on phones/tablets and improve **data sharing**.
- Adaptation (at the margin) of questionnaires for the different countries.
- We will provide a training on this tool for everybody in **March 2023.**

Tablets

Digital questionnaires / survey

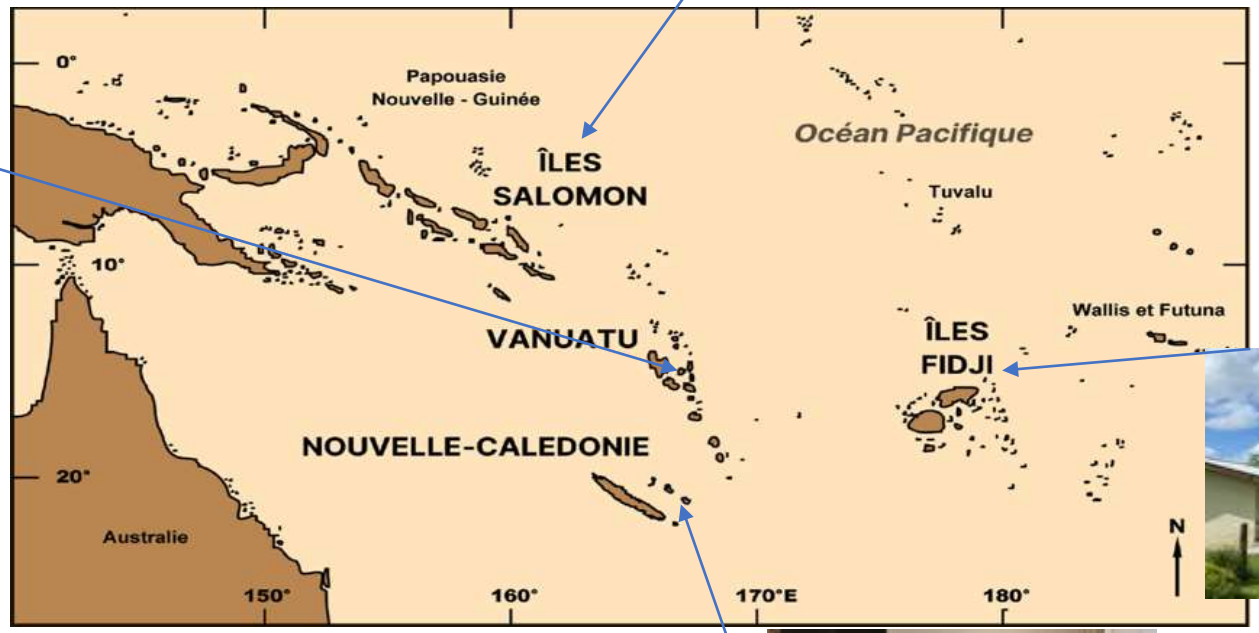
- ✓ Descriptive & Health outcome variables
- ✓ Family farming and livelihoods
- ✓ Physical activity
- ✓ Etc.

REDCap
Research Electronic Data Capture

RESEARCHER INTERFACE

1. Research Database Access (Log in)
2. eCohorte Database
3. Participant inclusion (UUID)
4. Participant recorded
5. Participant consent
6. Participant follow-up
7. Online dashboard
8. Attachment file
9. Online data export and analysis

	VANUATU (3 JUNE -3 July 2023)	SOLOMON ISLANDS (SEPT 2023)	FIJI (to be determined)	NC (2022, 2023)	PNG (to be det.)



Pierre Yves:

Luganville
Port Vila
Malikolo photos

	VANUATU (3 JUNE -3 July 2023)		SOLOMON ISLANDS (SEPT 2023)		FIJI (to be determined)		NC (2022, 2023)		PNG (to be det.)	
HIGH SCHOOLS	RURAL (Lycée Luganville Santo, Lycée Norsup Malekula)	URBAN (Lycée Antoine de Bougainville, Port Vila; Lycée Montmartre, Port Vila)	RURAL (Betikana, Temaru)	URBAN (Honiara)	RURAL (Nausuri)	URBAN (To be determined)	RURAL (Collège de Koumac, Collège de Lifou)	URBAN (Collège de Magenta; collège de Champagnat, Nouméa)	RURAL	URBAN
Adolescents 11 - 16 years	N=200	N=200	N=200	N=200	N=200	N=200	N=200	N=200		
Teams on site	UNC, IAC, IRD, UNV, MOET, VARTC, USYD…	UNC, IAC, IRD, UNV, MOET, VARTC, USYD…	UNC, SINU, and other teams depending on secondements	UNC, SINU, and other teams depending on secondements	USP, UNC, and other teams depending on secondements	USP, UNC, and other teams depending on secondements	UNC, IRD, IAC	UNC, IRD, IAC		
Parents & grand-parents	10+10	10+10	10+10	10+10	10+10	10+10	10+10	10+10		

ADOLESCENTS

-2 individual questionnaires + 1 qualitative interview on food, lifestyle and health
- Body composition measures
- Physical fitness tests
-50 adolescents will wear randomly a bracelet to measure physical activity during 7 days.
-TALANOA with adolescents in schools

FAMILIES :

-1 Family farming questionnaire+1 qualitative interview with a scientist
-1 individual questionnaire/interview on food, lifestyle and health
-body composition measure
- physical fitness test
-50 parents will wear randomly a bracelet to measure physical activity during 7 days.

COMMUNITIES/ PUBLIC PLACES:

-Surveys on the markets
- Mapping of food and physical environments
- Traditional knowledge, practices and resilience in campus students
- Etc.

Thank you for your attention

Research articles here

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 873185

Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

"Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

Gilbert David
IRD, UMR Espace-Dev

Disclaimer: the views expressed in this presentation are purely those of the author and may not in any circumstances be regarded as stating an official position of the Research Executive Agency

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 873185

Title: "Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

Sub Title: WHY ? 1) To acknowledge the value of family farming

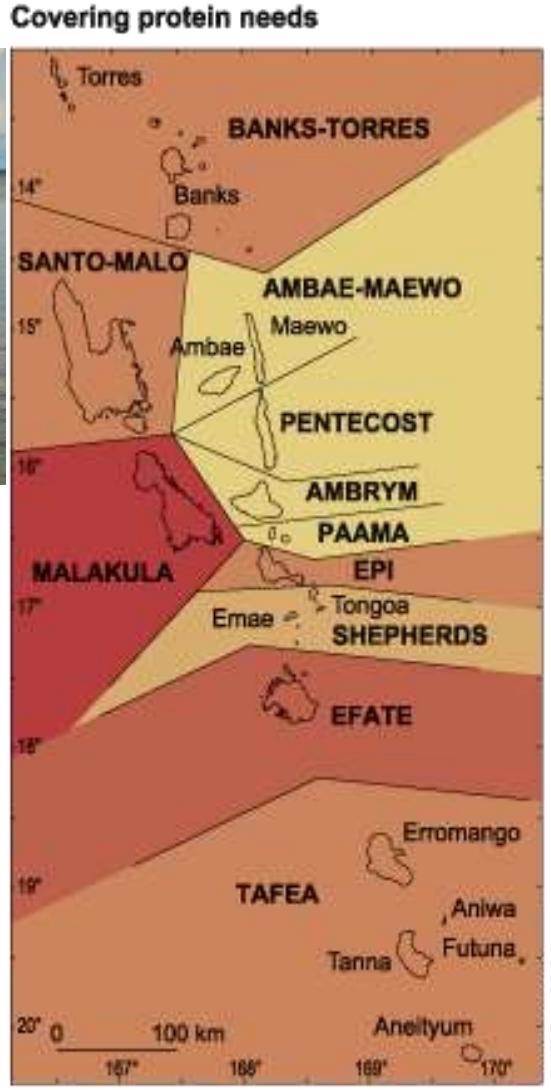
My own experience

- Cyclone UMA, 1987 Effects on Efate landscape
  - Family farming is less vulnerable than modern production

- Cyclone PAM, 2015, Effectiveness of « traditionnal » shelters against winds of 300 km/h

Title: "Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

Sub Title: WHY ? 1) To acknowledge the value of family farming



- Small scale fishing in Vanuatu , 1983-1991

Public bodies assumption : family fishing has no economic value as mainly devoted to self consumption

Reality : family fishing save 5% of the trade balance of Vanuatu

- Methods to achieve this result

a) Transforming the sea food production into proteins intake

b) Pricing the seafood proteins intake by using the price of tinned fish proteins

Title: "Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

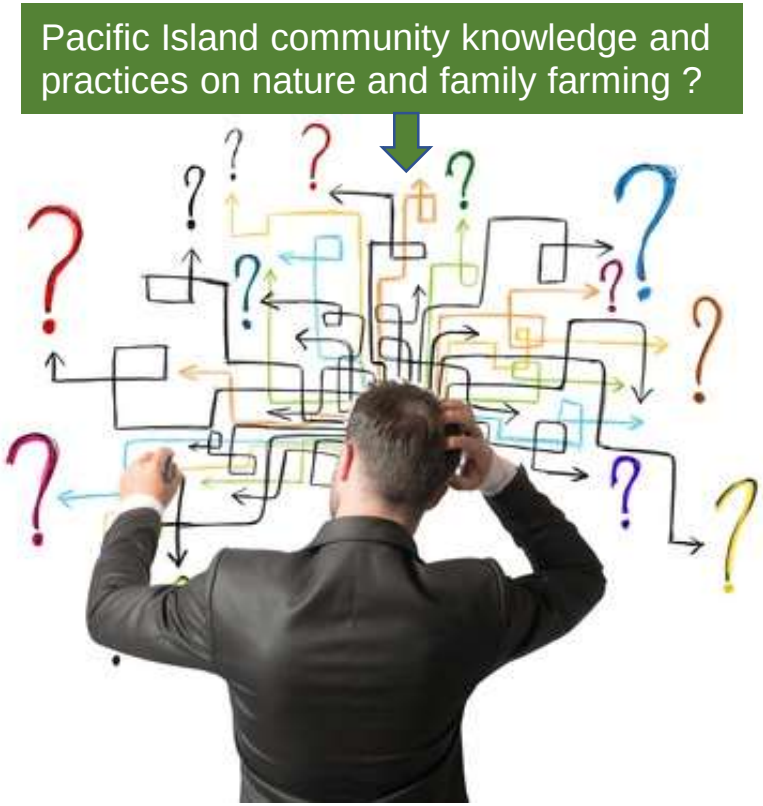
Sub Title: WHY ? 2) Integrating local knowledge into decision-making

- Main assumption : decision-making in agriculture, including public policies, should be based on scientific results

- Consequences:

  a) Pacific Island community knowledge and practices on nature and family farming become objects of scientific study

  b) science can be used to strengthen these knowledge and practices and to highlight their rationality



Title: "Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

Sub Title: science for strengthening practices and highlighting their rationality

The example of LMMAs

Locally-Managed Marine areas

LMMAs aim to revive traditional taboos by prohibiting all fishing for several months or years at a village scale

Main assumption of promoters of LMMAs:

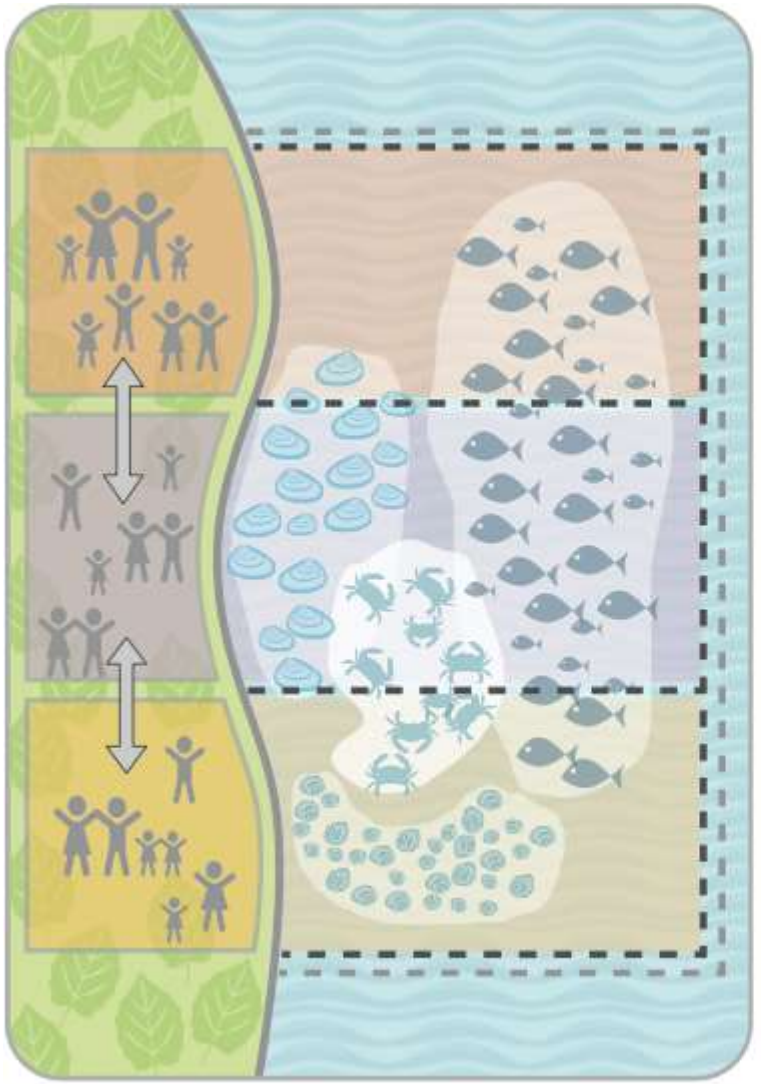
LMMA is efficient because fishing and management are carried out at the same geographical level by the same stakeholders.

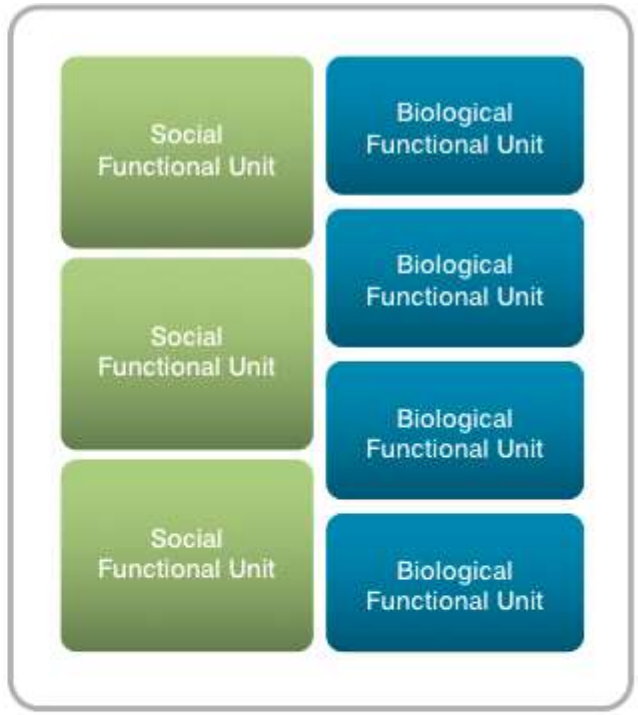
Science outputs

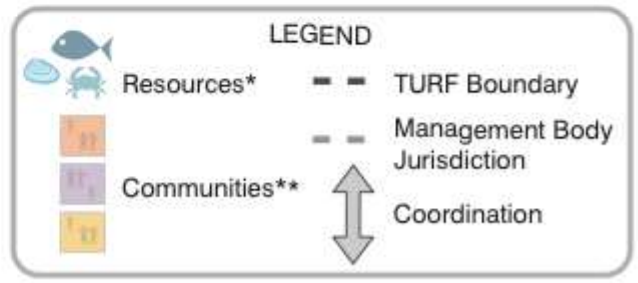
- LMMAs are ineffective in terms of stock replenishment if carried out at the village level. The biological fonctionnal unit may be quite wider than the social functionnal unit.

Effective LMMAs require:

1. a strong governance at the village level
2. Coodinations between villages





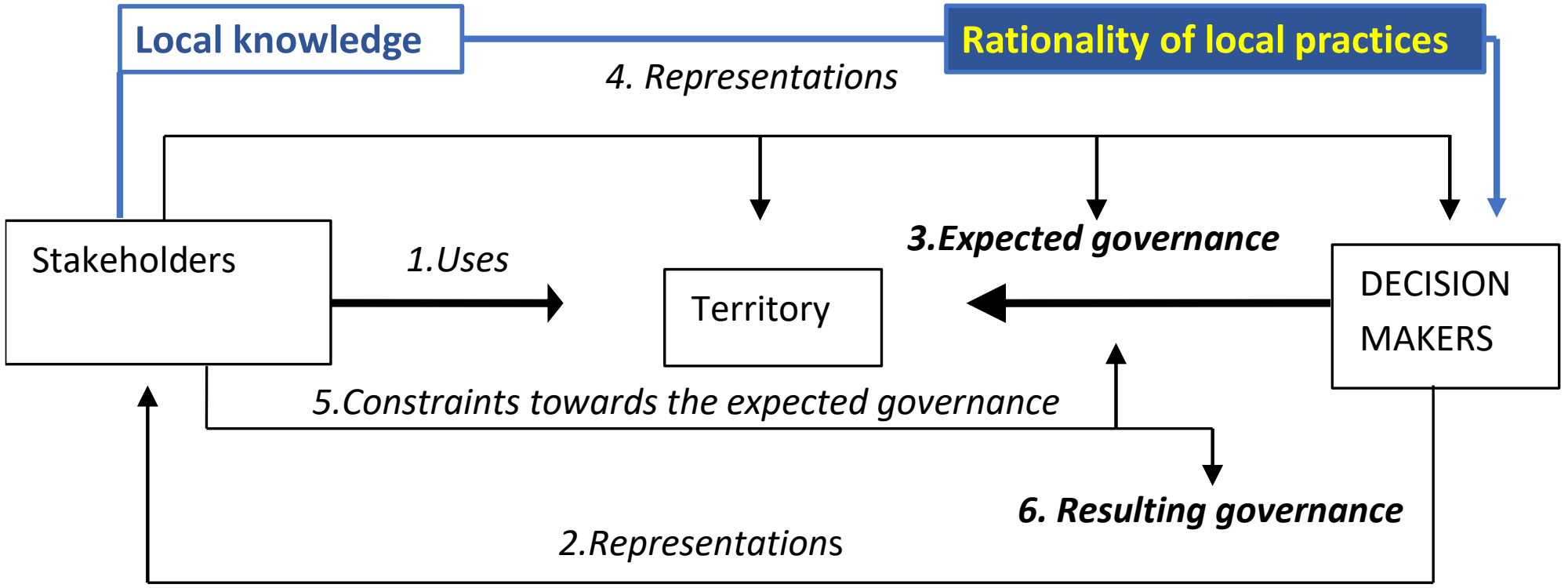


* Resources represent biological functional units.
** Communities represent social functional units.

Title: "Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

Sub Title: WHY ? 3) Improving the efficiency of decision-making

- Assumption : integrating local knowledge and rationality of local practices into decision making improves the social acceptance of decision-making



Title: "Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

Sub Title: WHAT KNOWLEDGE AND PRACTICES ?

a) Topic (dealing with)

b) Value of (according to the goal)
How can we assess the value of practices or knowledge?

c) Empirical knowledge and practices

on what evidence ? for what purpose? *Rationality of action*

d) Inherited knowledge and practices,

What is the rationality of local practices according to local stakeholders ?

Valuable input of Science to understand and revive this rationality ?

Title: "Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

Sub Title: HOW ?

Need to collect data

- Interviews
- Observation of practices

Need to

1) analyse data

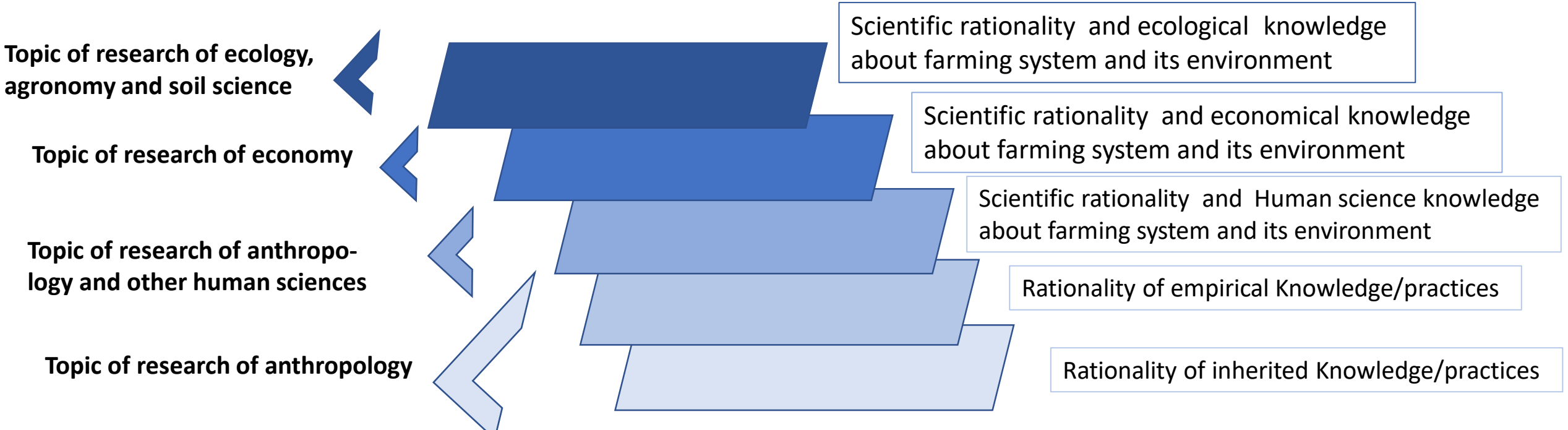
2) rank data

3) keep some data (according their value) and discard the others

Title: "Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

Sub Title: Key point 1: Rationality

- Assumption a): Any decision-making is guided by rationality
- Assumption b): Family farming can be seen as built with several layers of rationality, corresponding each with a distinct group of stakeholders



Title: "Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

Sub Title: Key point 2: Rationality and awareness of heterogeneous ways for thinking the world

How scientists and economists see local communities

Biodiversity/ populations

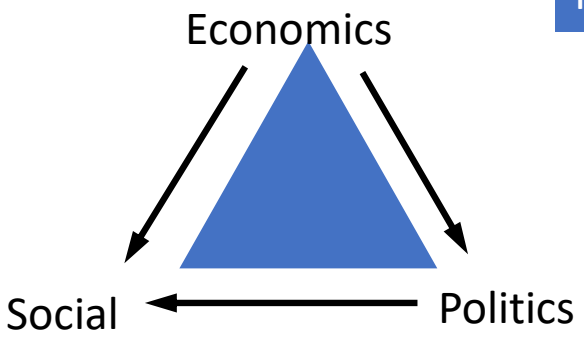
Human Populations

drivers

Ecosystem dynamics

Economics, (mainly livelyhoods)

Ecological knowledge



•How remote local commu-nities see their world

Territory

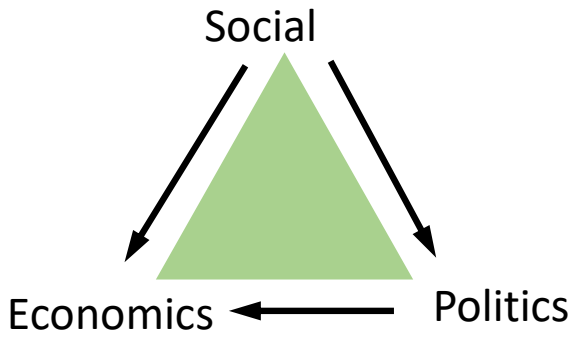
Nature

Society

Culture or uses

Social dynamics

drivers



Title: "Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

Sub Title: Key point 2: Rationality and awareness of heterogeneous ways for thinking the world

How scientists and economists see local communities

For scientists, human populations are part of the ecosystem

For economists, nature should be internalized into the market economy

For both, nature provide ecosystem services to local communities

•How remote local communities see their world

For local people, nature is part of their territory

And does not provide any ecological services because

the concepts of biodiversity and ecosystem are totally allien to their way of thinking the world

Title: "Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

Sub Title: Key point 3 Value of knowledge and practices

Point 1 : The total amount of Pacific Island community knowledge and practices on nature and family farming is too big for collecting and storing.

Point 2 : crucial need for selecting kwowledge and practices.

4 parameters for selection ?

Genericity

Efficiency

Coping with future

Ecological intensification

Title: "Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

Sub Title: Towards Future, protected areas for education

A way to bridge local knowledge on nature and scientific knowledge on biodiversity

Title: "Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

Sub Title: Towards Future, gardening in schools

A way to revive local knowledge (gardeners story telling)

and to bring scientific know-ledge about plants, soil, ecosystem

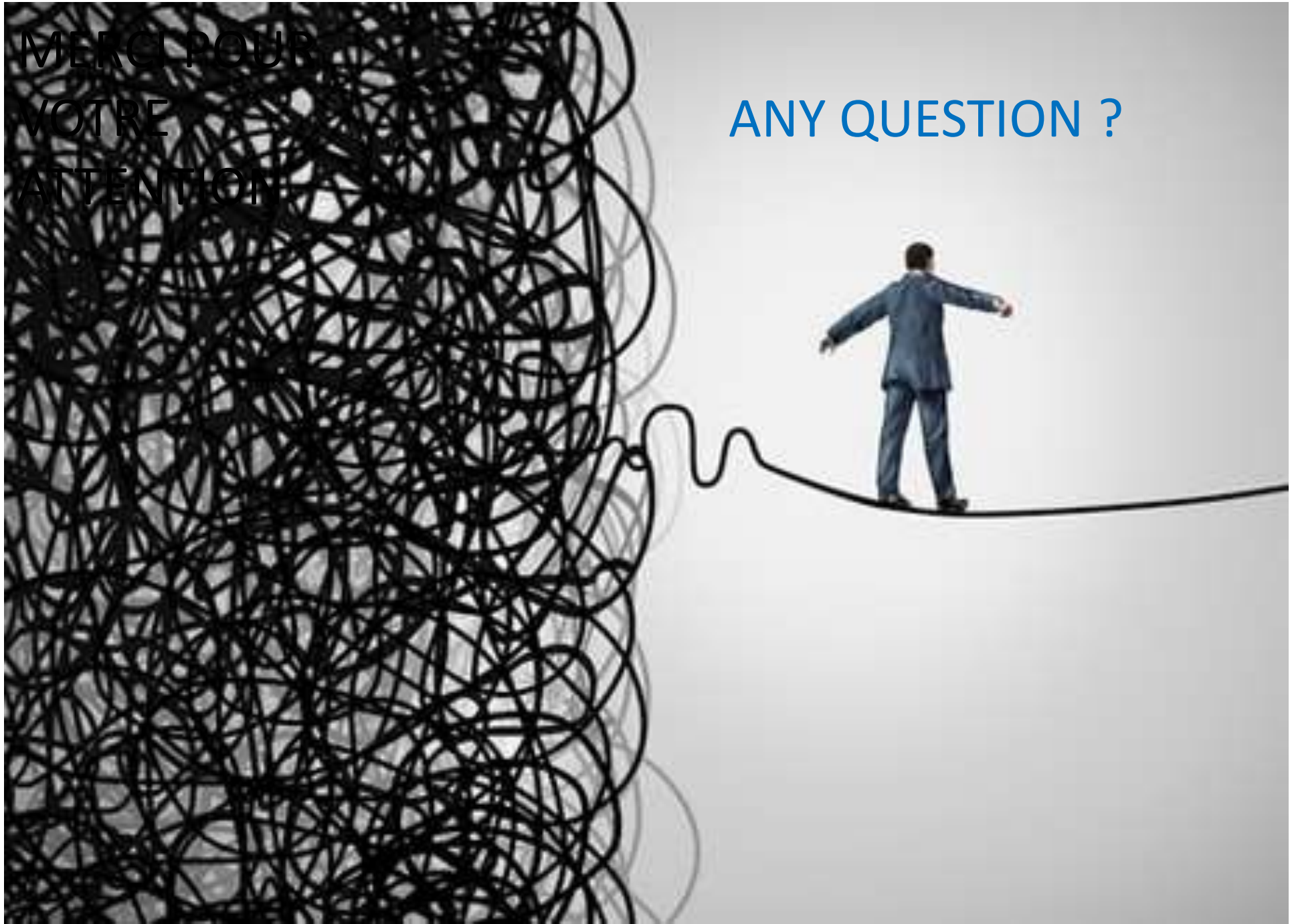
Title: "Towards new methods for integrating Pacific Island community knowledge and practices on nature and family farming into scientific studies“

Sub Title: Towards Future, poultry in school

A way to change the mind and move towards ecological intensification

MERCI POUR
VOTRE
ATTENTION

ANY QUESTION ?



The SPAR protocol: “Indigenous Knowledge, Practices and Resilience in the Pacific” (SPAR-Pacific) Pacific Islands University Research Network Grant

Dr Olivier GALY (UNC), Dr Akila Nedjar Guerre (UNC), Dr Louis Lagarde (UNC), Dr Dotte Anne-Laure (UNC), Dr Jean François Loisel (UNC), Ms Vaimoe Albanesse PhD student (UNC), Dr Christophe Serra-Mallol (UT2J), Pierre Metsan (UNV), Patrick Rory (UNV), Ben Boulekouran Ben (UNV), Adeline Mweleul (UNV), Ariane Naliupis (UNV), Augustin Nasse (UNV), Georges Taunearu (UNV)

Context and research questions

The Knowledge, Indigenous Practices and Resilience in the Pacific Islands (SPAR-Pacific) project focuses specifically on family perceptions and practices among New Caledonian and Vanuatu students and their families in 2022 in the Post COVID-19 Pandemic context.

Objective 1: Measure the existence and activation of traditional knowledge and practices among New Caledonian and Ni-Vanuatu students.

Objective 2: To appreciate the associated perceptions and intangible aspects of youth.

Objective 3: Understand the modes of development, expression, and transmission after the COVID-19 pandemic in relation to the socio-economic and natural environment of young people

Context and research questions

Indigenous knowledge and practices constitute *"a set of knowledge shared by a human group, which is transmitted and transformed, in connection with the ecology of this group. This knowledge covers :*

languages, literatures, arts, crafts, rituals, games, gastronomy, medicine, management of natural resources (fauna, flora, soil, water), architecture, artifacts, orientation in space, etc.

They are both a way of seeing the world and a way of living it. »

United Nations Permanent Forum on Indigenous Issues

Context and research questions

FALAH
Family farming, lifestyle & health

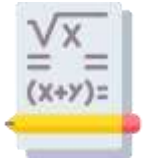
WP2	2.1 Gather and summarize knowledge on cropping practices, consumption, innovation and the dynamics of family farming **2.2 Improve understanding of how family farming functions through ecological, economic, sociological and spatial dimensions and how it adapts to the environment**
WP3	3.1 Examine the effects of family farming on lifestyle and its impact on the health and well-being 3.2 Explore diet and physical activity in families practicing family farming **3.3 Analyze inter-generational benefit on family farming lifestyle**
WP4	**4.1 Compare traditional family farming practices, its adaptation to the environment and identify best practices to disseminate** 4.2 Examine the role of school in promoting food education, physical activity, and changing dietary habits 4.3 Share new knowledge to develop sustainable intervention strategies that can help people from other regions **4.4 Accumulate, cross and share traditional and scientific knowledge on small-scale farming and eating habits to establish production and consumption strategies adapted to the socio-cultural context.**

Context and research questions

Mixed methods

Data collected

Sampling
students 18-30 yr



Quantitative approach :
Survey

- Place of community life
- Frequency of practices
- Place of traditional knowledge in lifestyle (spatial, social, temporal dimensions)

n = 100

n = 300 Nouville
n = 100 Baco

Qualitative approach: individual interviews

Explore ways that traditional knowledges and practices are generated, their perception, mobilised and ttansmitted,etc.

n = 10

n = 20 Nouville
n = 10 Baco

Timeline

- Phase 1 July 2022
- Phase 2 October 2022

Phase 3: deployment

SINU

USP

Protocol


SPAR-PACIFIC


Localisation de la zone d'étude
Commune de Nouméa
IUT
Ateliers
IAE-DEG
RÉSIDENCE INTERNATIONALE
ST
LLSH
INSPE
RÉSIDENCE UNIVERSITAIRE
Gymnase
PLATEAU SPORTIF
0
100
200 m

Test the questionnaire

Take the place of a student …. and do the survey

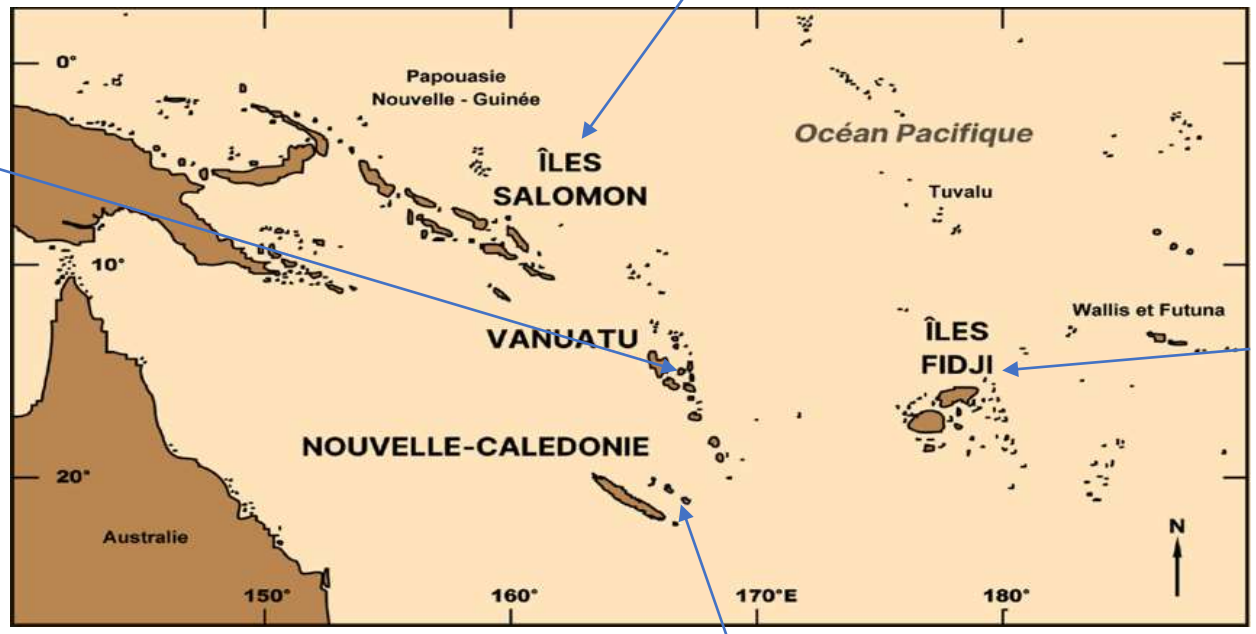
https://docs.google.com/forms/d/e/1FAIpQLSddzMDbEVxi-7aiItpUmmIYIy3-qhf1rk-csSa-oOs2rsI_hg/viewform

Next steps for FALAH Team

SINU: urban and rural campus
Coordinator: Dr Hugo Bugoro

UNV: urban campus

Coordinator: ……

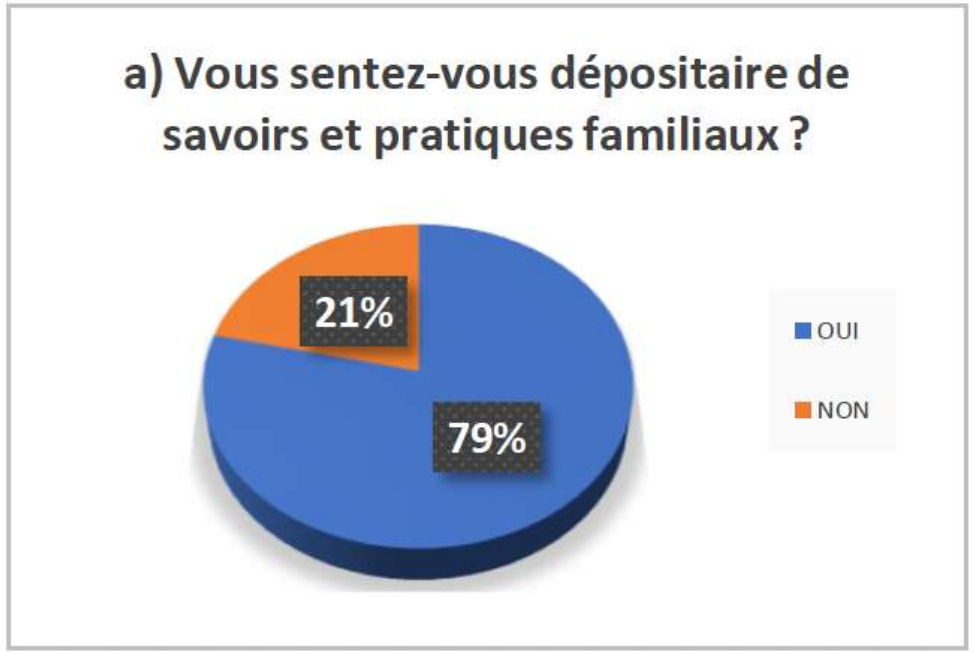


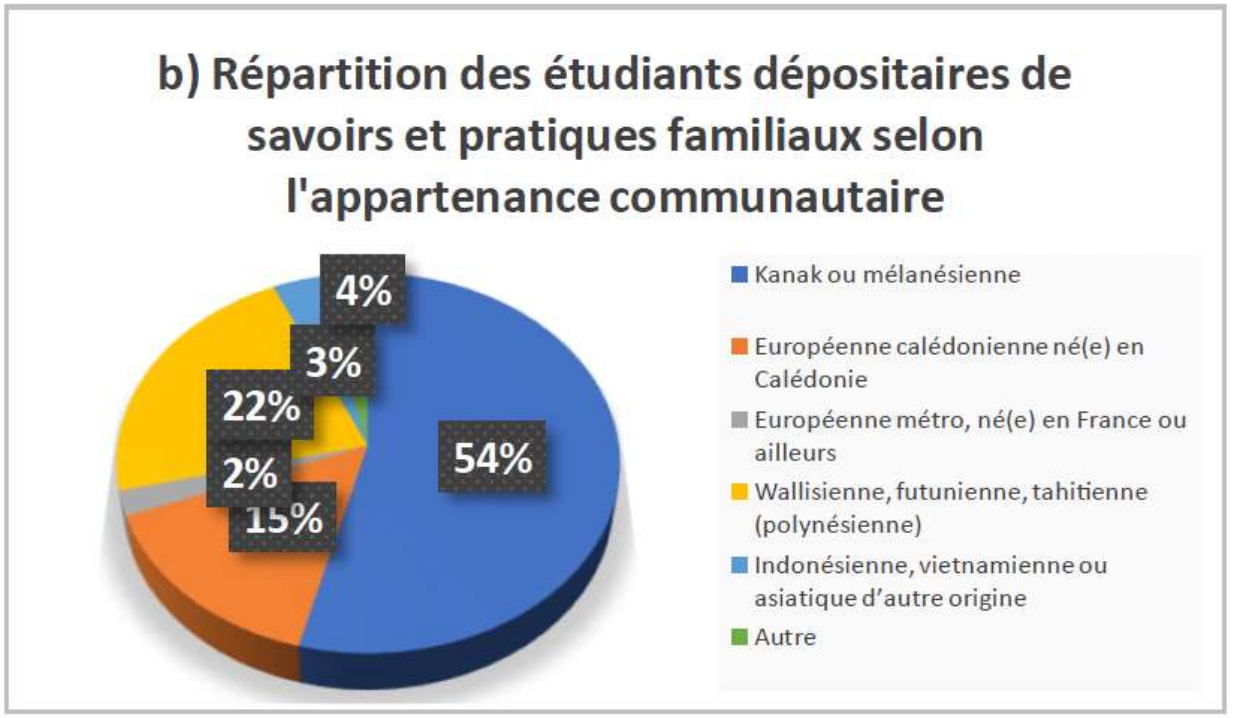
USP: 14 campus both rural and urban
Coordinator: …..

UNC: rural and urban campus

1-Identify team leaders
2- Launch the study in February 2023
3- Identify complementary funds for 2023-2024

Preliminary results

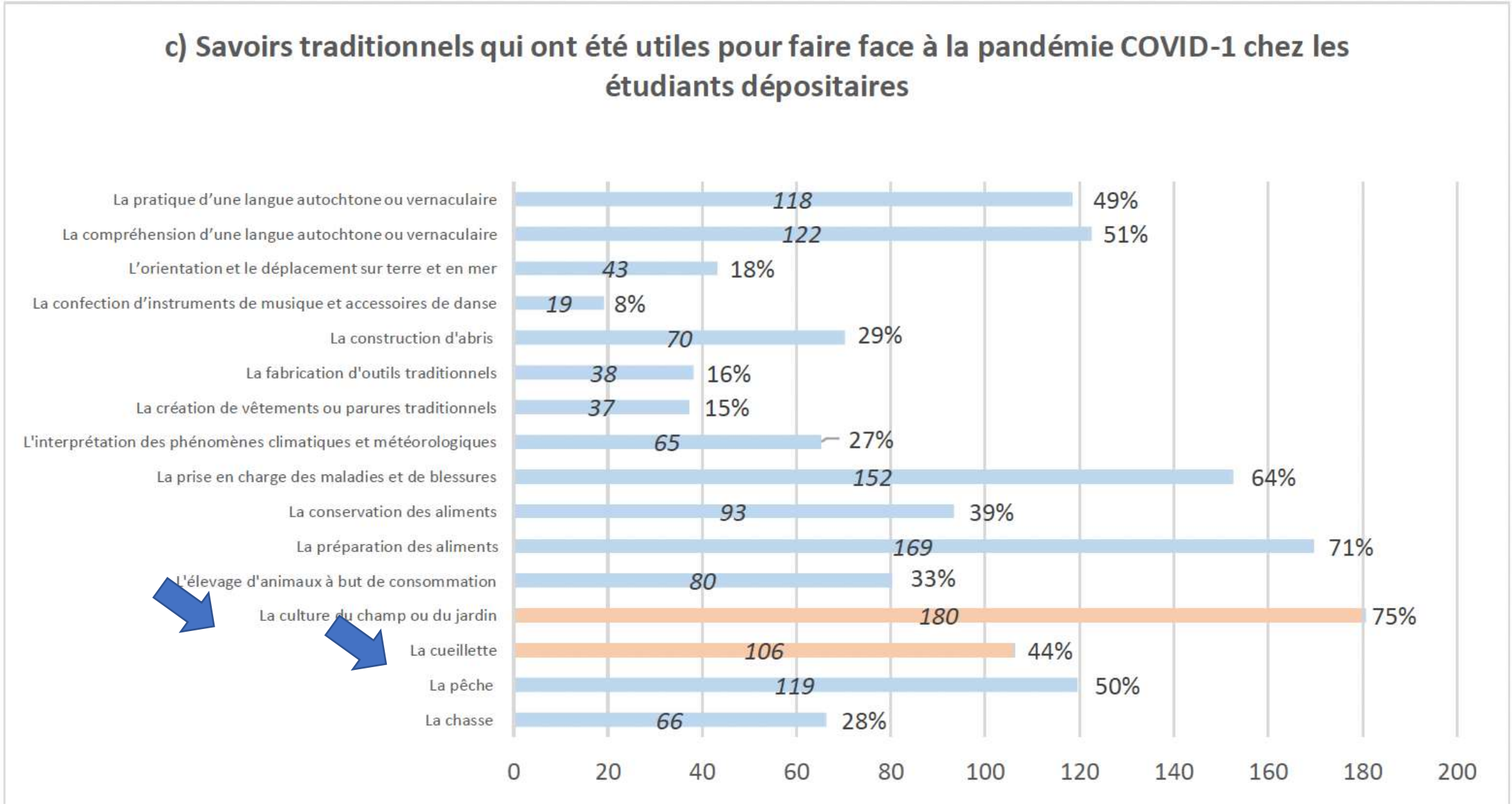




N=482 participants

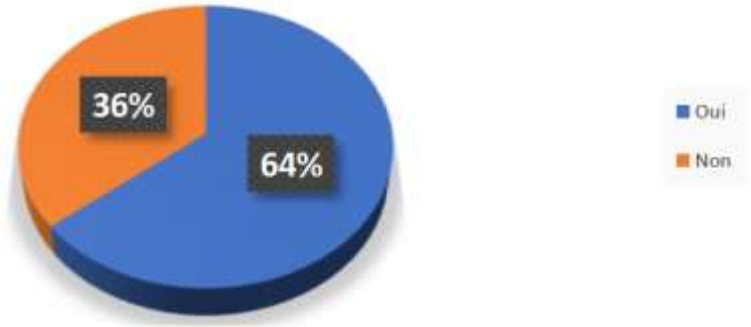
Preliminary results

N=380

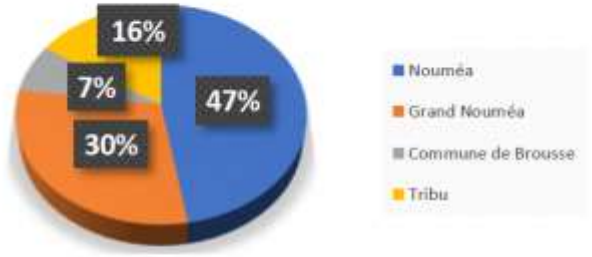


Preliminary results

a) Pendant la pandémie, pensez-vous que vos savoirs traditionnels vous ont été utiles pour faire face à cette pandémie ?

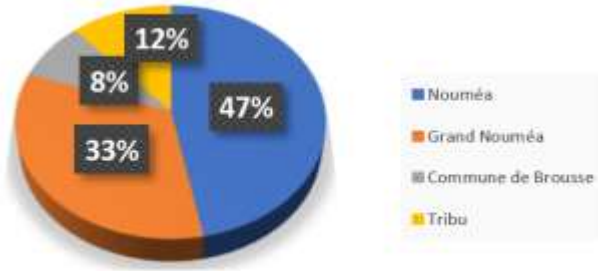


a) Lieu de vie avant la pandémie COVID-19

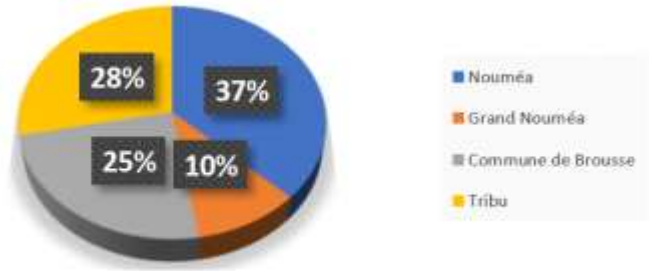


b) Même lieu de vie avant la pandémie ?

c) 294 étudiants sont restés sur le même lieu de vie avant la pandémie

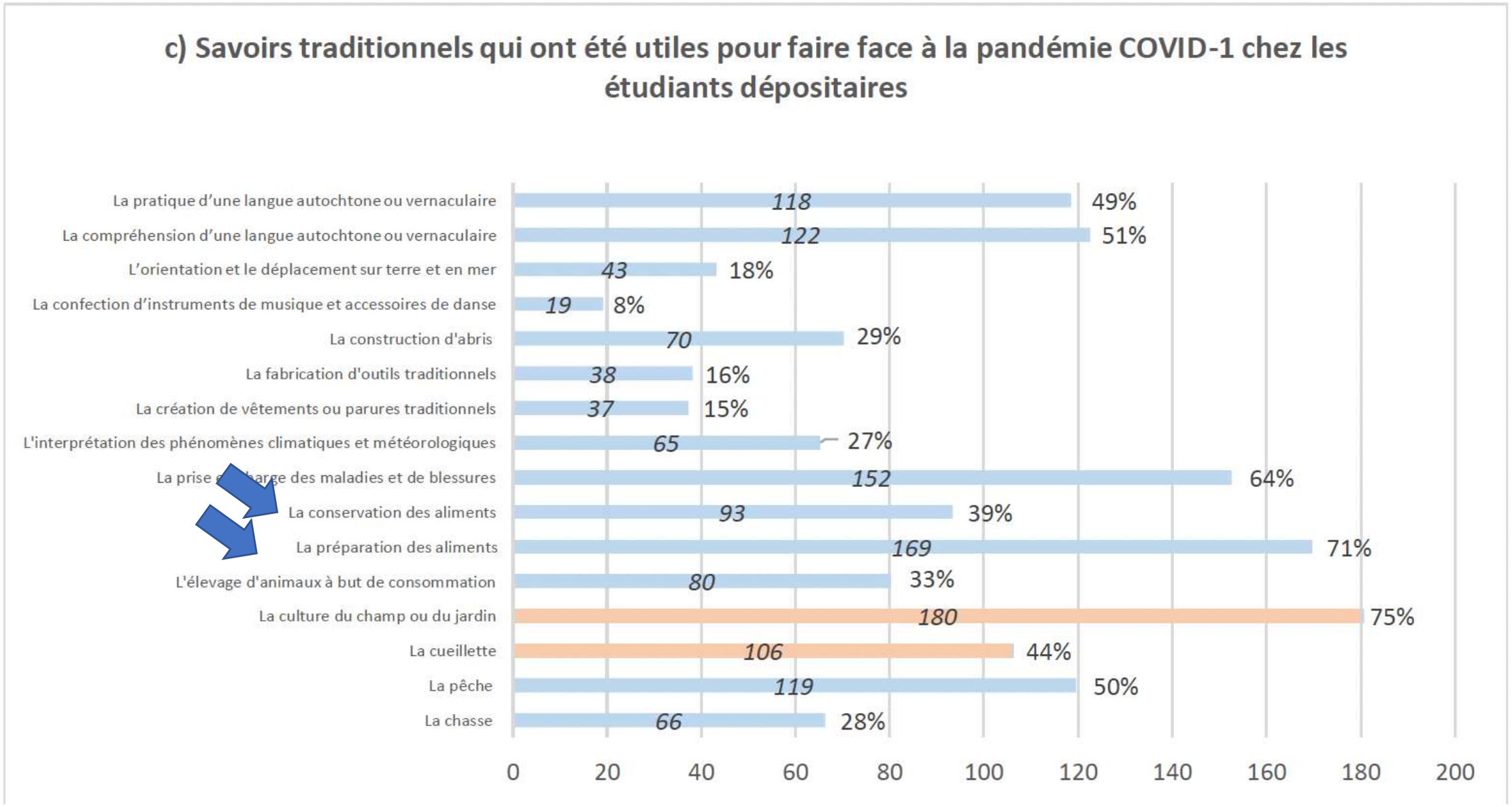


d) 78 étudiants qui ont changé de lieu de vie pendant la pandémie



Preliminary results

N=16



Preliminary results

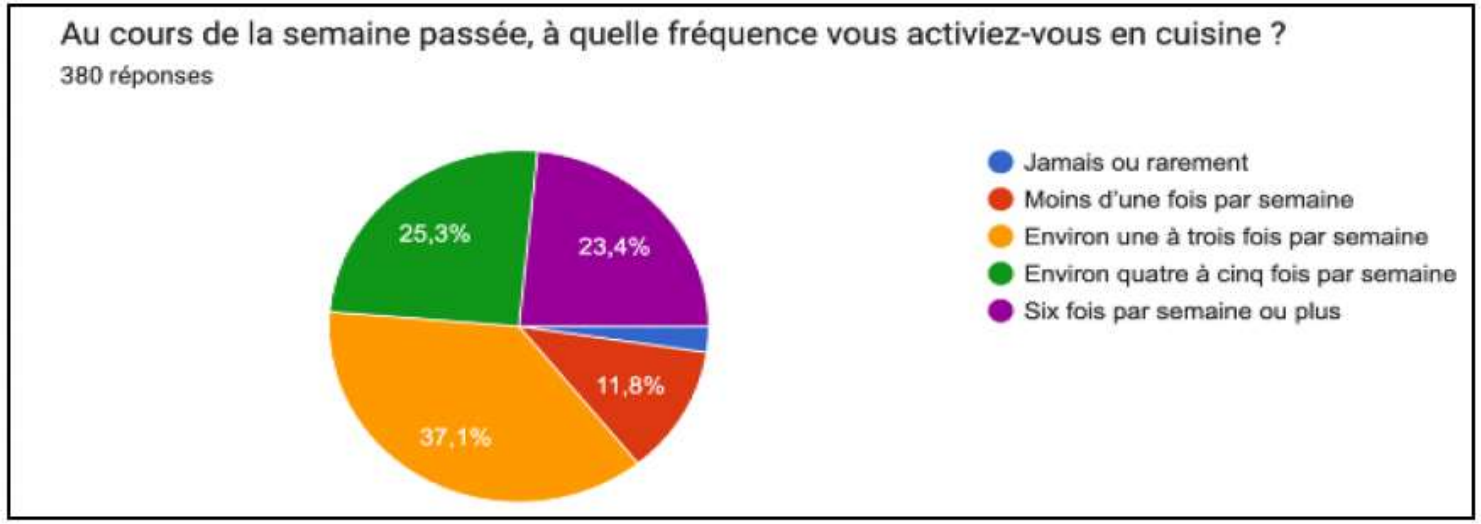


Figure 8 : graphique a, fréquence d'activité en cuisine

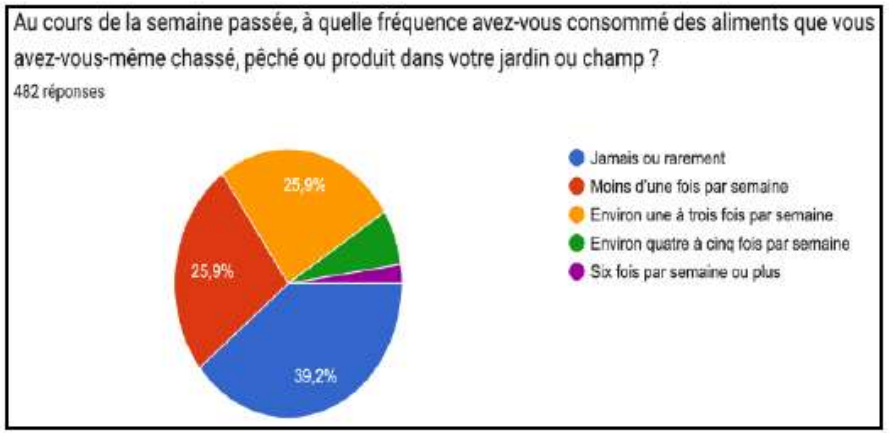
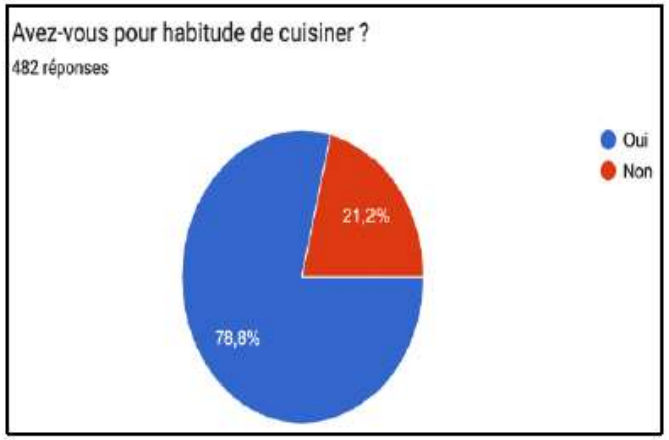


Figure 8 : graphique 3b, autosuffisance alimentaire



Graphique 3c : Habitude de cuisiner

Preliminary results

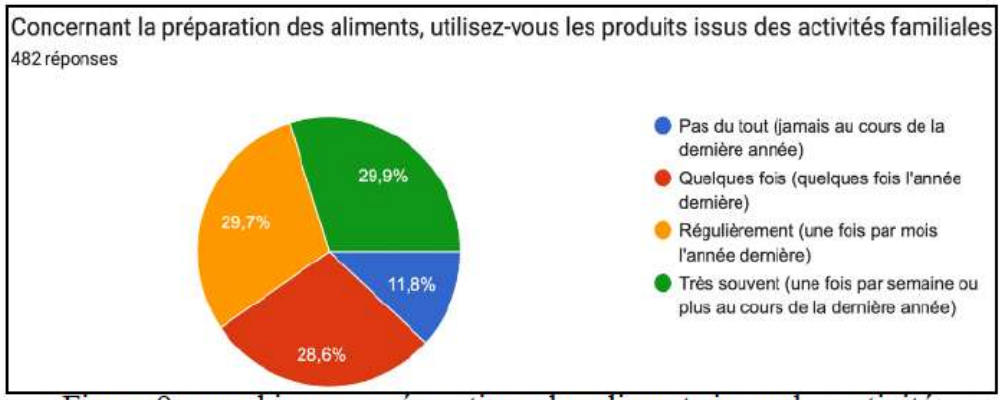


Figure 9 : graphique a, préparations des aliments issus des activités

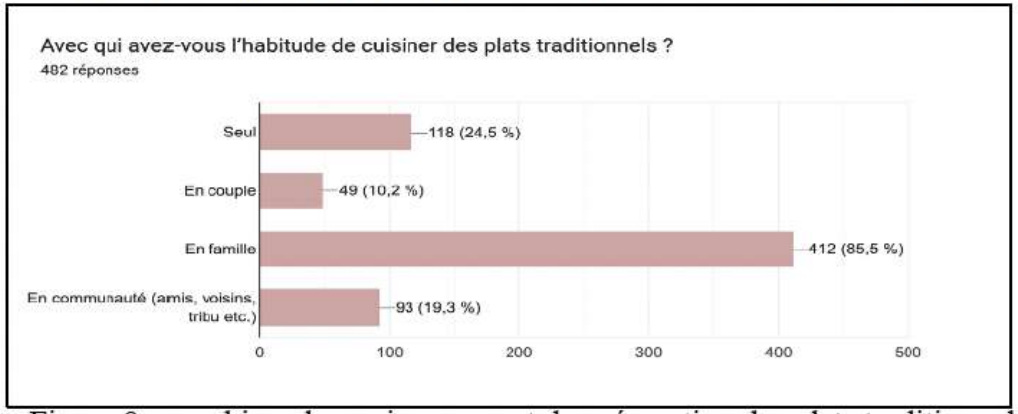
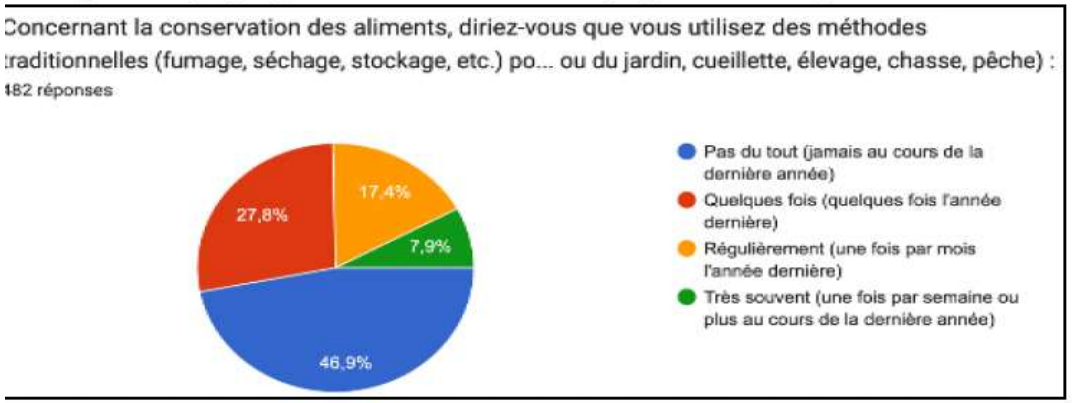


Figure 9 : graphique b, environnement de préparation des plats traditionnels



Thank you for your attention

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Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

Use of cultural practices to enhance student's performance in Mathematics Implementation and assessment of an experiment on sand drawing

METSAN, Pierre

3rd Year PhD Student

With the supervision of Pr. Catherine RIS,

And the Collaboration of Pr. Jean-Marie FOTSING (Leader FALAH Project)

LARJE , UNIVERSITY OF NEW CALEDONIA

Keywords : Mathematics, Students , Cultural Practices, Assessment, Vanuatu.

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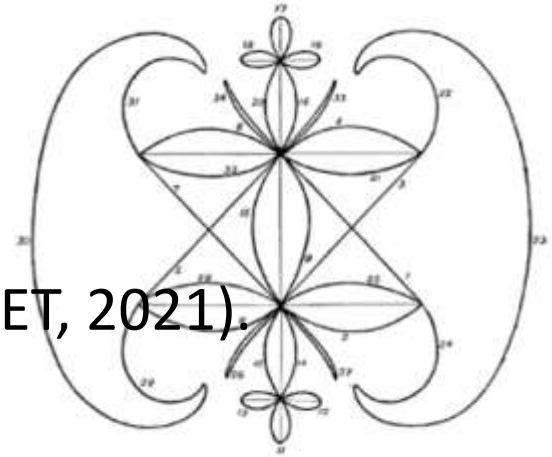
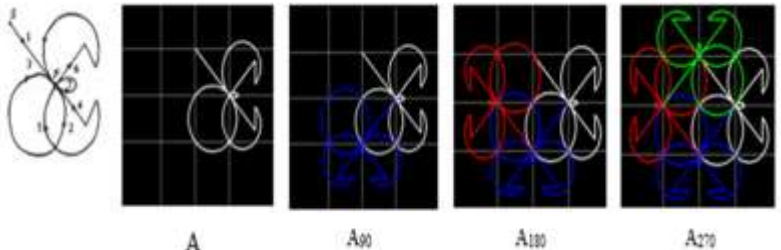
CONTEXT OF THE STUDY
Fala Links and Findings

- Research Questions (FALAH link) => WP4: 4.3 Share new knowledge to develop sustainable intervention strategies that can help people from other regions.



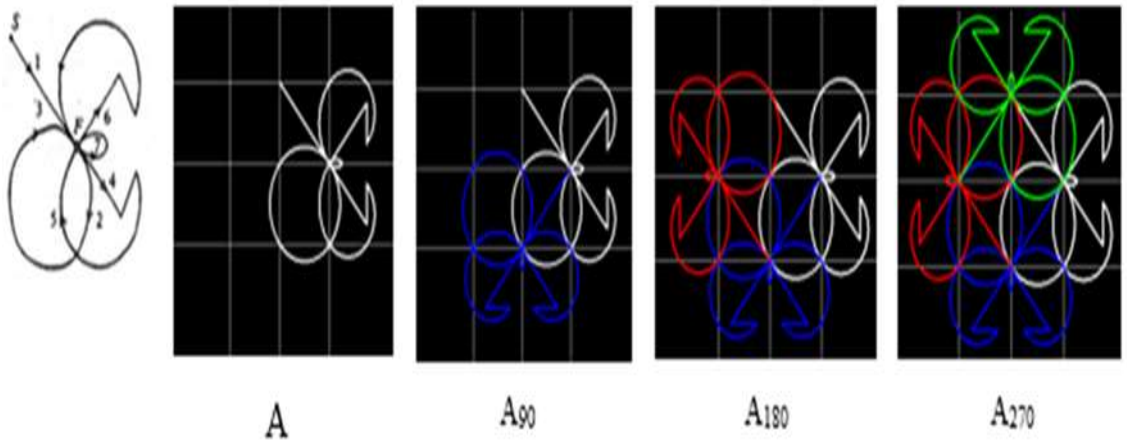
- Elaboration of a culturally and locally based curriculum (VNCS, 2010:34)
- Address low performance of Ni Vanuatu secondary school students (MOET, 2021).
- Why Sand drawing ?
- Use mathematical character of Ni-Vanuatu sand drawing and pedagogical implications (Ascher 1988, 1991, Da Silva 2022,)



OBJECTIVES AND HYPOTHESIS

Sub Title:

- Undertake a pedagogical experiment on sand drawing and assess its effectiveness on students performance in mathematics.
- Regular practice of sand drawing with the experimental group of students during 5 months enhances their mathematics performance compared to the test group of students.
- Practice of sand drawing in classroom over time can increase secondary school students' academic skills in mathematics.



METHODOLOGY AND TOOLS

Sand Drawing Experimental Design

Duration : 5 months ; 1hr of intervention per week

April | May | June | July | August | September | October | November

Teachers Professionnal workshop

Randomised assignment of Students per class (Duflo, 2009)

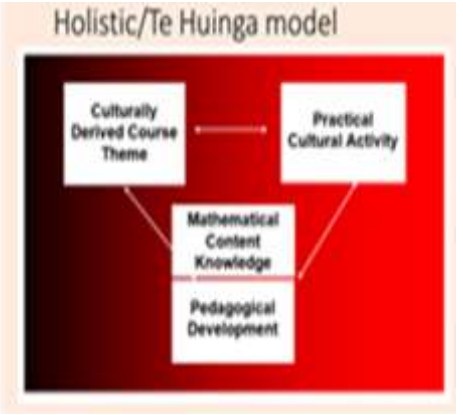
Introduction of sand drawing in mathematics class :
- 208 students
- Control group : 104
- Test Group : 104

Pre-Math's sand drawing assessment

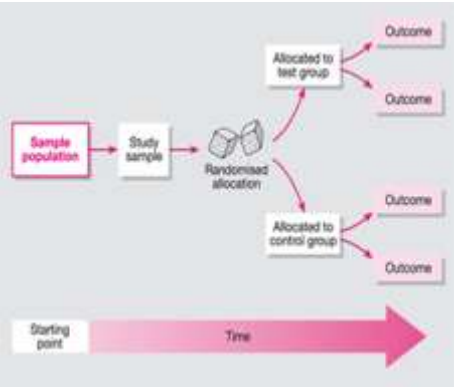
Post Maths's sand drawing assessment

Assessment of the Impact of the experiment

Research Field: Lycée Montmartre, Malapoa, Lycée Lab, Ecole Anaburu, Ecole centre Ville



Culturally Responsive Teaching Models, *(Averill et al, 2009)*



Randomised Control Trial Methodology. *(Duflo, 2009)*

RESULTS

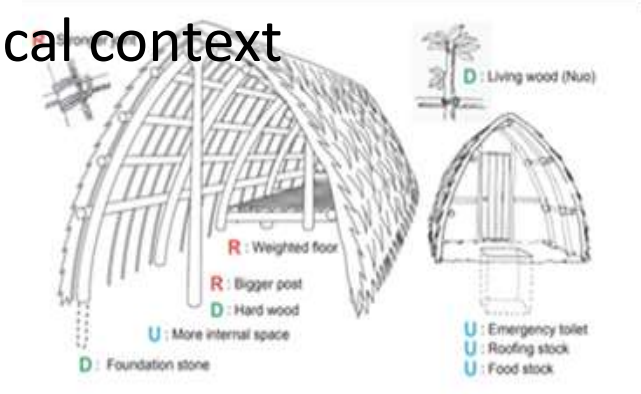
Experiment Results

- Hypothesis H0: Equality of Means : POST-PRE = 0
- Hypothesis H1: POST-PRE ≥ 0

Hypothesis Tests	Difference of Mean	Results	Interpretation
Test A: H0	GTEM PRE - GTEST PRE	H0 (90%)	Similarity of Control and Experimental group prior the intervention.
Test B : H0	GTEM POST - GTEM PRE	H0 (95%)	
Test C : H1	GTEST POST - GTEST PRE	H1 (45%)	Slight positive Impact of the pedagogical use of sand sa
Test D : H1	GTEST POST - GTEM POST	H1 (45%)	

DISCUSSIONS

- A slight impact was statistically perceptible.
- Teachers noted students' increasing interest in practicing sand drawings, as well as discussing their mathematical characteristics.
- Sand drawing experiment seems to have raised students' engagement and motivation in practicing mathematics.
- Expand semi-directive interviews with teachers on the integration of cultural practices activities.
- Develop and experiment lesson plan on other cultural practices.
- To what extent the use of cultural practices can contribute to better adapt the national curriculum to the local context



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TANKIO TUMAS !

Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

Do local knowledge and the exchange of knowledge drive the reduction of vulnerability to climate change?

Cases studies with food farmers of New Caledonia and Vanuatu

Lucie Gosset, *Phd in Anthropology*

Institut de Recherche pour le Développement FRANCE
French National Research Institute for Sustainable Development

Espace DEV
OBSERVATION SPATIALE, MODÈLES & SCIENCE IMPLIQUÉE

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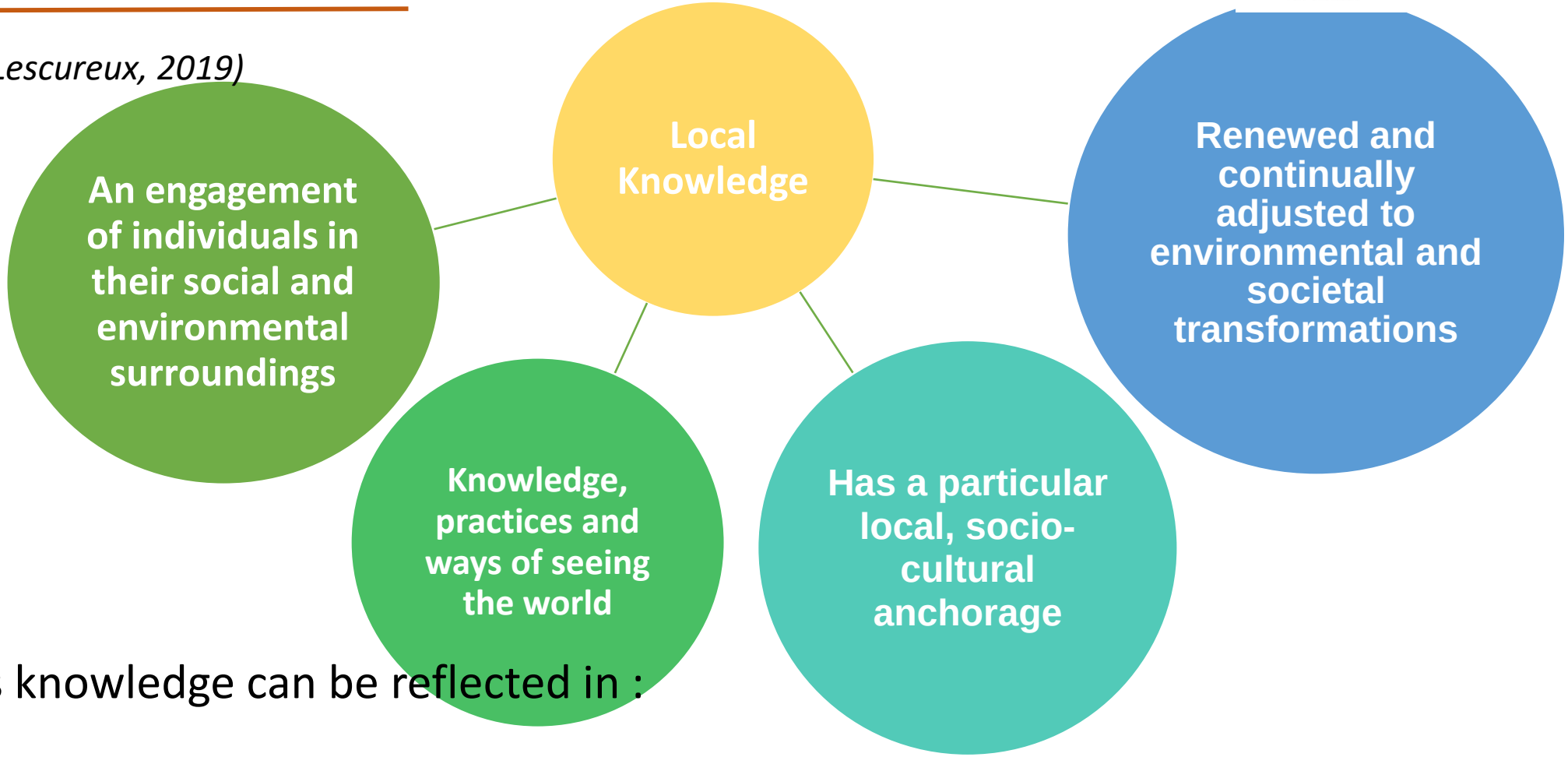
1.Definition of the concepts
What do I mean by local knowledge?

(Ingold 1996, Sabinot & Lescureux, 2019)



➔For example, this knowledge can be reflected in :

- *precise knowledge of fauna and flora, ways to predict climatic conditions*
- *way to resist to different crises and to ensure one's subsistence through pluriactivity*

1.Definition of the concepts
What do I mean by vulnerability?

(S. Weissenberger & al., 2016)

Study the fragility, the sensitivity of a system as a whole => taking into account natural and anthropic factors as part of the same system : *Concept of « systemic vulnerabilities »*

In this approach, 4 componients of vulnerability :

(1) Hazards (natural phenomena sometimes influenced by human actions)
(2) Issues (persons, good exposed to hazards)
(3) Management (public policies for prevention, protection and crisis management, equipment, individual responses)
(4) Perception of risk (awareness and memory of it, uses and attachment to exposed places, knowledge of safeguard measures, etc.)

(*Warrick, 2008,2009)*

« Factors and processes influencing exposure to climates stresses and the ability to cope with these are rooted in the conditions of every day life »

➔ Factors of stresses that influence vulnerability to climate hazards are not necessarily related to climate (social organization, land organization, economic relationships, etc.)

2. Presentation of the research subject

What is my research question?

- How does the diversity of knowledge, expertise and resources mobilized by the inhabitants of New Caledonia and Vanuatu to cope with atmospheric climate hazards and their consequences influence the way of being vulnerable to climate change?

- Can this knowledge be a resource on which public policies can rely to promote adaptation to climate change?

➔ *Focus on inhabitants that grow food products among other activities*

2. Presentation of the research subject
What are the main hypotheses of my research?

- Atmospheric climate hazards such as bad weather and droughts affect local knowledge and practices in general implemented by food farmers

- These inhabitants have abilities but also fragilities to face extreme atmospheric events which among others are part of their local knowledge, their practices and their environment

- External inputs (knowledge, material aid, advice, technical advice, school system, etc.) have an influence on the strengths and weaknesses of these food farmers dealing with intense atmospheric events

2. Presentation of the research subject

How do I conduct my research?

- Work based on an anthropological approach

➔Collection and analyze of qualitative data

➔Fieldwork method

- Surveys are conduct with different categories of actors : food farmers and their relatives, technical agent of the communities, institutional actors, members of association, cultural centers (ADCK, VKS), etc.

- 8 at 9 months of field work in specific location in New Caledonia and Vanuatu

➔ Specific choices to precise the object of study, the location of the study in both territories

- Relevance to work with farmers of yam and water taros (family and professional farmers)
- Revelance to study the knowledge, choices, and circulation of varieties

3. Some first results

How local knowledge could be considered by different actors?

1) By the technical agents and politicians:

➔ A shift and a reduction of the term "local knowledge" to "traditional knowledge"
support vs reluctance => collecting process of local knowledge in the project

Reluctance factors

- It refers to colonial history
- Knowledge anchored in a specific cultural context
- Knowledge erosion

Adhesion factors

- Practices that respect the environment and health (cultivation methods, food)
- Heritage dimension : collecting as a means of preserving knowledge
- A way to adapt to climate transformation (mix trad/ modern)
- An answer to face climatic hazards

2) In students awareness campaign on natural risk management

➔ ambivalence in the way they are considered => sometimes valued or disvalued

➔ All type of local knowledge are not considered in the same way

3. Some first results

What does "climate change" mean to the people we met and what do they say about it?

- A general discourse based on information of the media

➔ Phenomena and events that doesn't concern New Caledonia

➔4 main phenomena mentioned : ice melt, fires, **coastal erosion, rising sea level**

➔ Inhabitants had difficulties considering climate change outside the coastal context => an fragility to cope with climate change

- A more precise discourse built on localized observations:

- an alteration of the natural cycle of the environment (seasons, extreme events): what is not usual or known
- An imbalance ➔ phenomena perceived negatively
- New phenomena (non observed in their experience or that of their elders)

➔ This transformations associated to climate change ➔ loss of reference point (ecological indicators)

3. Some first results

What are the first issues for the professional farmers related to atmospheric weather hazards?

1) Issues and concerns to cope with extreme events are specific to each farmer

Issues and concerns depend on various factors such as :

- cultivation method used
- access to water for cultivation
- Location of the farm, its configuration, the available cultivable land
- Species planted
- Importance of farming in farmer's livelihood
- size of the enterprise and its financial capacity

2) Small farmers => difficulty to benefit from certain aids or technics offered by institutions (aids for agricultural disasters/techniques to face pests) ➔ interventions of the communities, organizations should be diversified to answer the various profiles and capacities of farmers

3) The technical contributions or regulatory frameworks of institutions are sometimes disconnected from the realities of the field (farmers' issues and plantation logics)

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Methodological orientation test, methodological approaches and first results

25th, 26th and 27th of October 2022

National University of Vanuatu, Port Vila

FALAH Scientific Activities at USP

Frank Thomas and Poonam Singh– on behalf of USP FALAH Team

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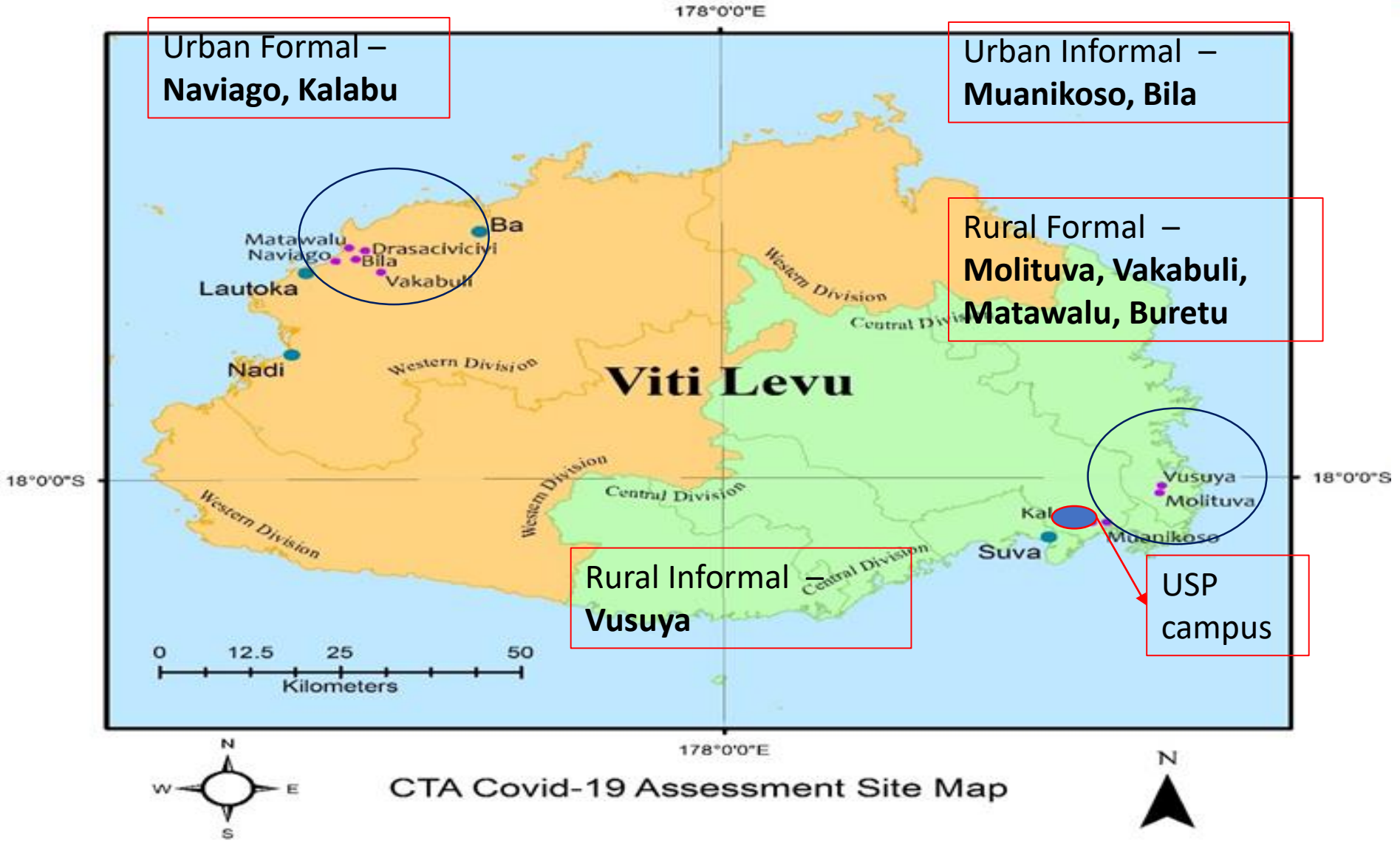
Title: **FALAH Scientific Activities at USP**

Research relevant to FALAH

- **Continued research in crop-livestock integration – livestock (lamb) with taro systems**
- **Yam propagation through vine cutting**
- **Processing and storage of surplus food**
- **Development of food products**
- **Livestock Feed Research and Continued research into alternative feed additives**

Research Sites in Fiji



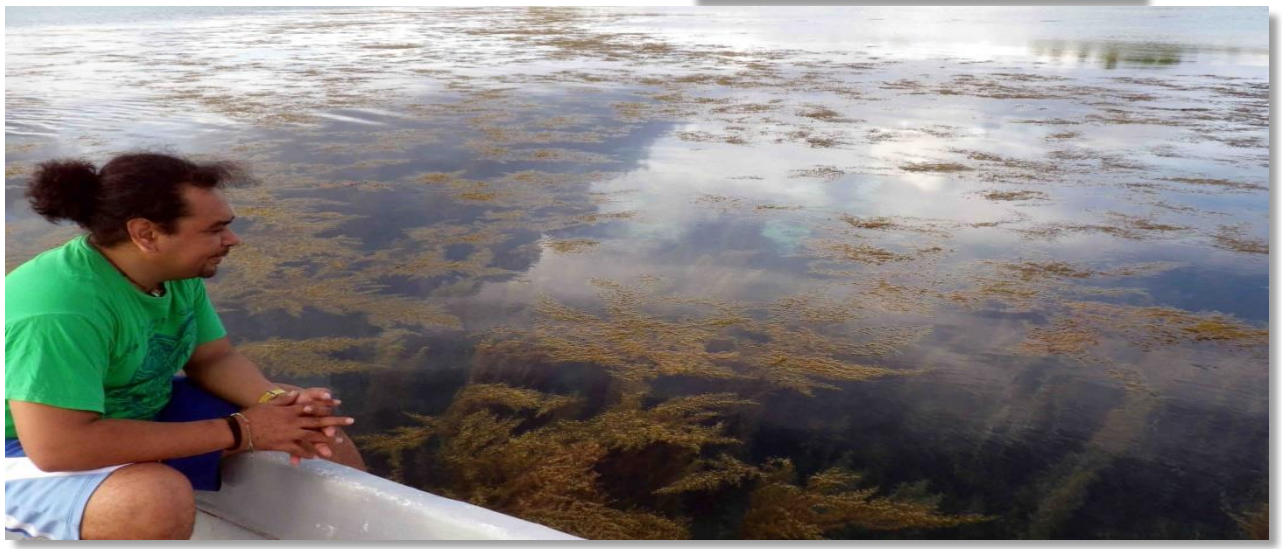
Pacific Centre for Environment and Sustainable Development (WP2 and 3)

- Intervention Co-creation to Improve Community-based Food Production and Household Nutrition in Small Island Developing States (ICoFaN) - UKRI
- Co-creating evaluation frameworks for community food production initiatives and reducing community health risks (Co-CFaH) - SRT
- NIHR Global Health Research Group on Community Food, Nutrition and Planetary Health in Island States (Global CFaH) - NIHR

Pacific Centre for Environment and Sustainable Development

Valorization of Pest Marine Seaweeds and Invertebrates for the Production of Agri-Fertilisers (WP2)

- Dr. Antoine D.R. N'Yeurt, Dr. Lau Viliamu Iese,
- Ms. Catherine Soreh & Ms. Sarah Griffin

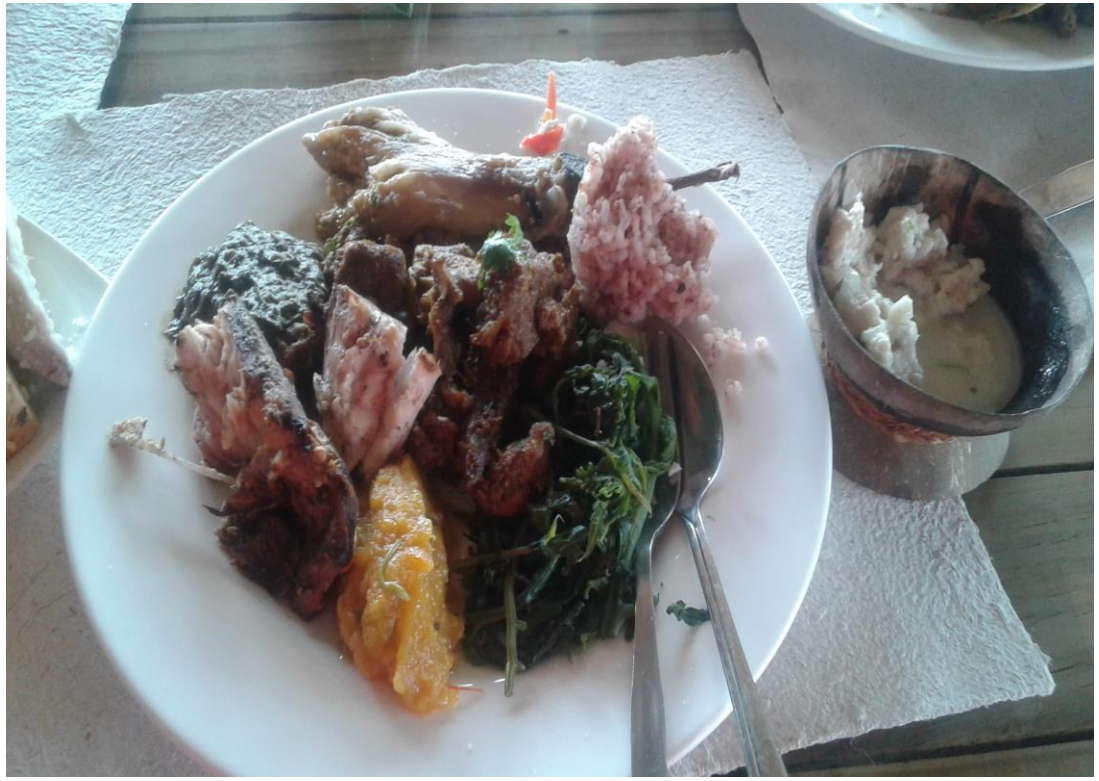


Additional research – PaCE-SD

- Agro-climatic research to promote the use of crop models to assess climatic risks and inform agriculture adaptations in the Pacific Islands – with A/**Prof. Samsul Huda from Western Sydney University**
- Market functionality index and Minimum expenditure basket for Fiji and Samoa – UNWFP

Institute of Marine Resources (Cherie Morris)

- Octopus and lobster research
- *Harvester stories on behavioral patterns of octopus documented at Koroinasolo, Bua.*
- *Still yet to document that of Votua, Nadroga whereby a certain clan's totem is octopus.*
- *DNA sequencing, morphological assessment, market survey*
- *Temporal genetic variation in the coral sea maskray (Neotrygon trigonoides) from Fiji*
- *Environmental DNA in Fiji* - Aqueous eDNA samples were collected from Votua and greater Serua. Samples will be sent to France for DNA extraction, PCR-amplification, Next Generation Sequencing and bioinformatic decoding resulting in the diversity assessment of various shark species at the sampling sites.



Additional research (WP2) – Joape Ginigini

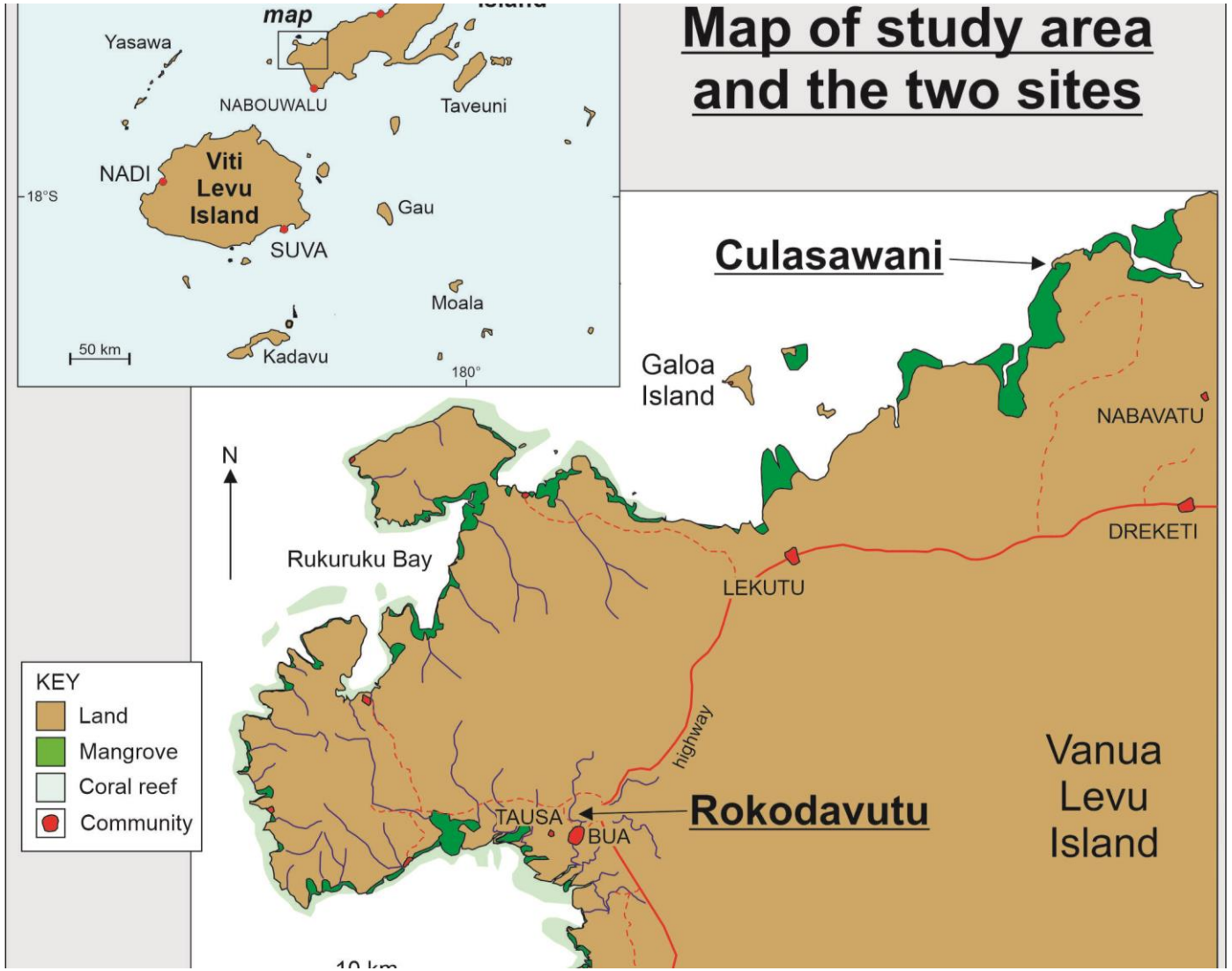
- https://pacman.obis.org/
- Joape Ginigini (Project Manager) – Institute of Applied Sciences (IAS)
- Pacific Islands Marine Bioinvasions Alert Network
- Deals with loss of biodiversity that leads to food insecurity

Additional research (WP2) – Pacific Studies (Frank Thomas)

- Ethnoarchaeological Investigation of Two Extraordinary Shell Middens, Vanua Levu Island (Fiji): Implications for Human-Environment Interactions. (SRT)

Shell Middens

- Most rural-dwelling Pacific Islanders today utilize the same subsistence-food resources as their ancestors did, as much as three millennia ago
- Understanding how Pacific Islanders in the past utilized and managed these resources, especially in the face of comparable climate-driven threats as exist currently, is therefore relevant to developing strategies for sustainable futures in island countries like Fiji and similar contexts



- An exceptional opportunity to inform such strategies is provided by the discovery of two shell middens, 35 kilometers apart, in a little-researched part of the Fiji archipelago
- The river-bank midden of Rokodavutu represents an unusually early interaction between shellfish-eating peoples and the nearshore environment while the midden island – the first ever discovered in Fiji – of Culasawani represents a prolonged period of interaction between humans and nearby riverine, lagoonal and reef ecosystems
- Both sites are located in places where there are Fijian communities (with whom the research team has existing relationships) that interact with similar ecosystems in ways that will be comprehensively researched
- Through a process of mapping, excavation, sampling and analyses, as well as the collection of oral histories, results will paint a comparable picture of past human-environment interactions in the area. Understanding how past interactions were sustained will inform strategies for future interactions

- How can sustainable future human-environment interactions in rural tropical island contexts be informed and guided by analyses of the Rokodavutu midden and the Culasawani midden island? To answer the research question, the following objectives are identified

- (1) FIELDWORK: Local residents' routine subsistence interactions with local environments will be described and key challenges identified. The two middens will be comprehensively mapped, excavated and sampled. Local residents' traditions relating to the two middens and their associations will be collected, translated and transcribed

- (2) IN-FIELD SAMPLE ANALYSIS: the structure and composition of the two middens will be analyzed to determine the principal species/environments being accessed through time. Potsherds, lithics, bones, shells and other material will be washed in the field and preliminary identifications made. Selected artefacts will be removed for further analysis, storage and display at the Fiji Museum (in-country project partner), other materials to be analyzed in-country as needed

- (3) LABORATORY ANALYSIS: midden chronologies will be determined from 20 radiocarbon dates on suitable shells (targeting Anadara sp.) sampled. Shells will also be analyzed using oxygen-isotope and trace-element analyses to determine contemporaneous paleoclimate and paleo-ocean changes

- (4) RESULTS: Paleoenvironmental reconstructions of the two midden sites and their evolution during their periods of occupation will be enabled by their mapping, chronologies, changes in species composition through time, and paleoclimatic analyses. Reconstruction of the changing pattern of human-environment interactions will lead to an understanding of changing production, demand and what traditionally constituted sustainability. Comparison of the past situations represented by the two middens and modern uses of the same environments will allow insights into how contemporary human-environment interactions might become more (and less) sustainable in the future

- (5) OUTPUTS: Results will be presented in scientific outlets, through a display at the Fiji Museum, and as a tri-lingual poster series for local/Fiji schools to optimize local stakeholder uptake

Shellfish Gathering among Contemporary Communities – collaborative research during secondments

- Focus on communities engaged in shellfish gathering for subsistence and commercial purposes to examine human foraging behavior and conservation strategies in relation to changing environments and cultural systems viewed by participants and compared to scientific measurements and the paleoenvironmental/archaeological record
- Participant observation, including Time-motion studies to determine caloric expenditure
- Interviews
- Nutritional analyses

Human predation directly reduces the abundance and biomass of mollusc populations, which can alter the mean size of the prey population.

In cases of intensive predation, extirpation (local extinction) may follow.

Indirect effects on community structure –predation of keystone species affecting organisms at all trophic levels and decrease in the ratio of natural predators to prey, thus reducing interspecific competition.

Conversely, predatiion can increase diversity and richness by creating a mosaic of different patches with different stages of succession.

The relationship between predation, recruitment, and change over time in the relative abundance of marine invertebrates in intertidal areas is complex.

Fecundity and growth rates, size at maturity, escape and avoidance mechanisms such as burying and benthic mobility, the presence of adjacent subtidal populations for replishment of stocks, and larval phases can complicate understanding of the impacts of human exploitation.

For archaeologists and ecologists, the lack of ecological information on commonly exploited taxa, the responses of these populations to human predation, and limited understanding of people's role in structuring intertidal mollusc populations reduces our ability in isolating anthropogenic influence.

Greater susceptibility of insular terrestrial resources and ecosystems to disturbance because of low reproductive rates and few natural enemies.

Greater resilience of most marine resources as a result of high fecundity or ability to disperse widely at the larval stage.

Overharvesting of slow-moving invertebrates by selectively gathering the largest available molluscs can depress the size range of a resource. Overharvesting can also lead to significant disruption of the ecosystem and to the loss of genetic diversity.

Local extinctions of tridacnid clams (‘giant clams’) linked to overharvesting in Fiji, Tonga, New Caledonia, Guam Marianas, Cook Is, Samoa, Vanuatu, and FSM in historic and pre-European contact times.

Explanatory Frameworks for sustainability:

Low human population densities and extractive limitations in the past(technology and absence of markets).

Optimal foraging decisions (derived from behavioral ecology), supported by actualistic studies, resulting in epiphenominal conservation (secondary phenomenon, where conservation is not the cause, but the consequence of a decision leading to conservation).

Conservation by design and customary marine tenure systems.

Giant clam (tridacnid) ‘gardens’, Abemama Atoll, Kiribati

Sustainability

Sustainability attributed to multiple variables, such as;

- foraging practices (e.g., by reducing intraspecific competition),
- environmental changes,
- anthropogenic practices (e.g., by removing species' predators, resulting in increasing longevity, with more individuals surviving longer to become larger before the onset of maturity),
- Also increasing horticultural activities leading to eutrophication (nutrient enrichment),
- and the creation/expansion of preferential habitats

Research in Food & Nutrition (WP 3)

"To eat is a necessity, but to eat intelligently is an art."

- La Rochefoucauld

FALAH Project at USP

Co-creating evaluation frameworks for community food production initiatives and reducing community health risks (Co-CFaH):

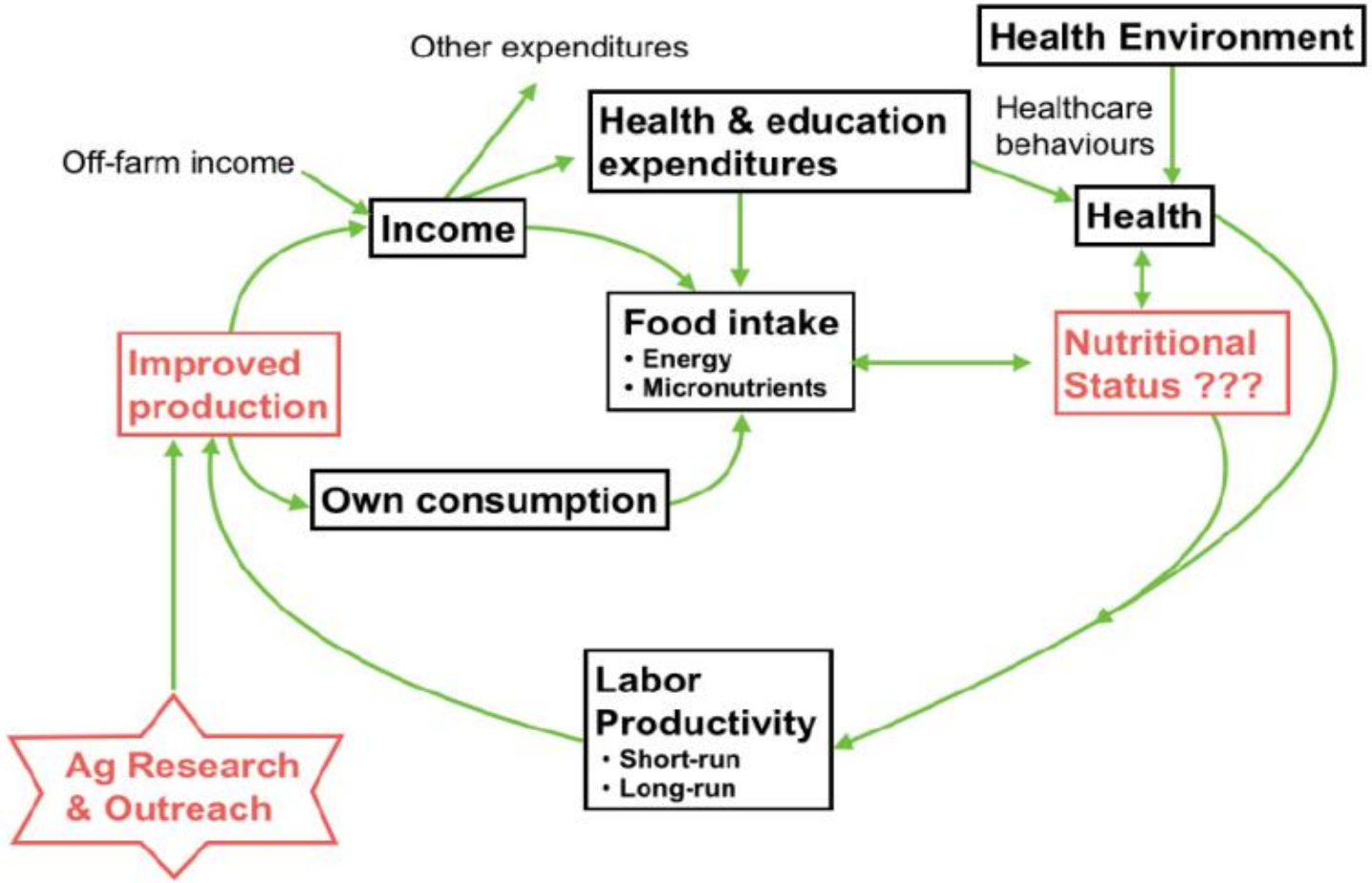
- Objectives of Co-CFaH are to evaluate community and household level interventions. The nutritional value of foods that are locally produced and consumed in Fiji and Solomon Islands and improving local food production and nutrition.
- This will be informed by evidence reviews and participatory model building to map local food systems and take a cultural and gender-sensitive approach.

Cont.

- A household survey will be conducted at baseline and follow up in the intervention and comparison area, at the same time of year to account for seasonality . Data will be collected by interview using an existing, context-specific electronic questionnaire in REDCap on android tablets. Second survey will be carried out in the second year.

- This project will provide an interim assessment of how the interventions have been taken up, and the types of impacts over this short term on diet. Further follow will be essential to assess their medium to long term impact.

cont.


Other expenditures
Health Environment
Health & education expenditures
Healthcare behaviours
Off-farm income
Income
Health
Food intake
• Energy
• Micronutrients
Nutritional Status ???
Improved production
Own consumption
Labor Productivity
• Short-run
• Long-run
Ag Research & Outreach

Micronutrient Deficiencies and Malnutrition

- The survey reports done by NFNC 2007 (micronutrient status), 2010 (Fortification) reported the differences in the rates of anemia, iron, zinc and folate deficiencies between baseline up to 2004 and after 2010 were highly significant (Avinesh Gopal, 2012, The Fiji Times).

Nutrient Bioavailability

- Researches showed micronutrient deficiencies (mainly anaemia) in Fiji from 1940, 2004 especially in women and children. Fiji government started iron fortification, iron tablet distribution programmes and organise healthy eating awareness workshops.
- Iron deficiency is most common problem worldwide especially in developing countries.

Bioavailability

- Mineral bioavailability is the measure of the proportion of the total mineral in a food or diet that is absorbed, digested or metabolized by normal pathways (Fairwather-Tait,1987).

- Bioavailability refer to that proportion of the total amount of mineral element present in a nutrient medium that is potentially absorbable in a metabolically actual form. The term ‘Potentially absorbable’ used because the actual amount absorbed may be affected by many factors (Welch and House, 1984).

Malnutrition

- Nearly 41 million overweight children globally, an increase of 11 million since 2000. Most rapid growth has been seen in middle-income countries, many of which face the combined challenge of tackling of both undernutrition and obesity along with subsequent diet-related non-communicable diseases.

"Globally, nearly 1/3 of people suffer from as a result of malnutrition: wasting, stunting, vitamin and mineral deficiency, overweight or obesity and diet-related non-communicable diseases."

Dr Francesco Branca, WHO Director, Department of Nutrition for Health and Development

Cont.

- Malnutrition refers to deficiencies, excesses, or imbalances in a person's intake of energy and/or nutrients. The term malnutrition addresses 3 broad groups of conditions:

- **Undernutrition**, which includes wasting (low weight-for-height), stunting (low height-for-age) and underweight (low weight-for-age);
- **Micronutrient-related malnutrition,** which includes micronutrient deficiencies (a lack of important vitamins and minerals) or micronutrient excess; and
- **Overweight**, obesity and diet-related noncommunicable diseases (such as heart disease, stroke, diabetes and some cancers).

Vinaka – time to move