

Agriculture in kanak tribes

Weightage and functions of agricultural and hunting/fishing activities – IAC survey



IAC - Nicolas Petit



Presentation of the study

What do agricultural (crops and livestock) and hunting/fishing activities of tribal families in New Caledonia truly represent?

What are the quantities of crops harvested and number of animals raised?
How much fish is caught and how many animals hunted?

What roles do these activities represent for these families?

These are just some of the many questions that arise when we talk about farming and hunting/fishing activities in New Caledonia, particularly as they relate to tribal families. The statistical data currently available do not permit full answers to these questions. The need to take a fresh and original look at these activities led to a comprehensive survey project in 2011 on the significance and functions of tribal agriculture.

This survey was conducted by New Caledonian agronomic institute (IAC – Axis III – New Ruralities and Common Destiny), with the support of the Centre for International Cooperation in Agronomic Research for Development (CIRAD-ES).

For nearly five months, a team of IAC researchers and investigators traveled the length and breadth of New Caledonia to meet tribal household members (see definition p.8). Based on a representative random sampling, 1786 households in 288 tribes (out of the 340 in the country) were surveyed, which is 12.6% of the total population of tribal households.

The data were then extrapolated to provide comprehensive results that apply to the entire population of interest. The data collected pertained to household activities from January to December 2010.

Goals of the study :

■ **Assessing the extent of agriculture and hunting/fishing activities for tribes.**

What is the extent of these activities of cultivation of crops, raising of livestock, and fishing and hunting, whether for commercial purposes or not?

How much land is used for agricultural activities?

■ **Studying the contribution of these activities in terms of income, employment, reduction of inequalities, maintenance of lifestyles and building up of social relationships.**

How are these activities linked to other social and professional activities?

What is the diversity of the situations encountered?

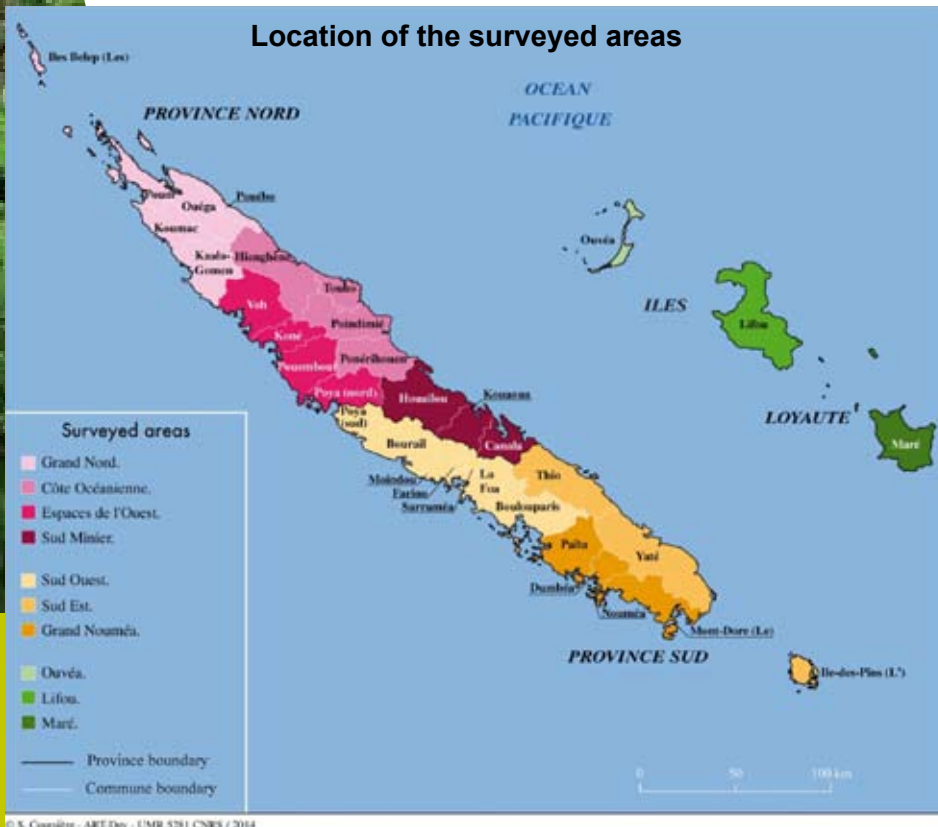
■ **Contributing to the debate on the definition and inclusion of tribal agricultural production in official statistics and public-policy making.**

How to bring in a new approach to assess tribal agriculture and to measure the wealth it generates?

What does the future hold for these activities which are heavily oriented towards home consumption and non-commercial exchanges?

> This document aims to present the main results of the research project. For more detailed analyses, the full report can be downloaded at this link: www.gaiac.iac.nc.

Location of the surveyed areas



The Tribal Population

56,670 tribal inhabitants, i.e., 23% of the total New Caledonian population

Based on the results of the General Population Census (RGP 2009 - ISEE), the survey shows that about 1 in 4 New Caledonians lives in a tribe (see p.8 for definition), i.e., 56,670 individuals. 52% of them live in the Northern Province, 30% in the Loyalty Islands Province, and 18% in the Southern Province.

In the **Northern Province**, the 29,130 individuals are divided into 5,900 domestic groups (see p.8 for definition) and represent 65% of this province's total population. This population is concentrated in Grand Nord and in Côte Océanienne.

In the **Loyalty Islands Province**, 98% of the population is tribal, i.e., 17,150 individuals in 3,350 domestic groups. Half of them live on Lifou.

Finally, in the **Southern Province**, the 10,390 tribal residents, divided into 2,320 domestic groups, represent only 6% of the total population. It is in Sud Est that they are the most numerous.

Each family group consists of an average of 4.9 persons, with the groups being generally larger in the Islands (5.1) and smaller in the Southern Province (4.5).

A lower proportion of tribals aged between 30 and 49 years

In the tribes, the proportion of the population under 30 years is higher than for the country as a whole, while the figure of those over 50 years mirrors the national ratio. However, those between 30 and 49 years are less numerous in tribes as compared to the rest of the country's population. Given that half of the country's unemployed population is tribal (RGP 2009 - ISEE), one explanation is provided by migration to the villages or Grand Nouméa by tribals looking for employment or wanting to further their profession.

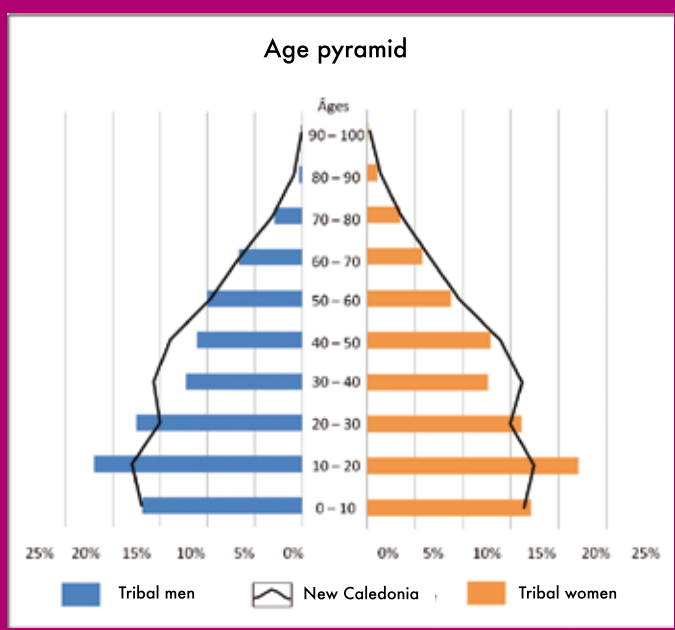
77% of those over 16 years participate in agricultural or hunting/fishing activities

In 2010, individuals aged 16 and over participated significantly* in agricultural or hunting/fishing activities.

Nearly half said that these were their only activities. Without being able to ascertain whether this was by choice or due to limited opportunities, the survey also revealed that a third of them were, in addition, involved in another work activity (see p.8 for definition). Agricultural and hunting/fishing activities therefore concerned 77% of individuals 16 years and older. Only 8% of them reported that their only work was at some other activity.

Agricultural and hunting/fishing activities are, however, not confined to those 16 and older. For example, 72% of those between 14 and 15 years also participate, though often only occasionally. Younger children are also often involved from an early age.

On another level, 96% of domestic groups had at least one member who, in 2010, was involved significantly in agricultural and hunting/fishing activities. 69% of domestic groups were involved with both types of activities.



Activity of those older than 16 years	Number	In %
Agricultural and hunting/fishing activities only	18,768	48%
Agricultural and hunting/fishing activities combined with another type of activity (e.g. mason, teacher, sales of meat skewers, etc.)	11,447	29%
Other types of activity only (def. p.8)	3,335	8%
No activity	5,729	15%
Total	39,279	100%

* An activity is considered significant when accumulated working time over the year is 160 hours or more (the equivalent of one full-time work month). School and community activities are not included.

Plant and animal production

Abundant and ubiquitous agriculture

Harvested agricultural volumes (from fields and home gardens) reflect the importance of tribal agriculture. They amounted to 31,000 tonnes in 2010, with tubers and bananas accounting for more than half (respectively 10,000 and 6,000 tonnes).

The provinces do not all contribute equally to production: the Northern Province generates half of the tribal crop production, the Loyalty Islands Province one-third, and the Southern Province 13%. Specifically, the Northern Province produces half of the tubers (mainly in Côte Océanienne) and 80% of the bananas (mainly in Grand Nord). The Islands produce half of the coconut crop (mainly on Ouvéa and Lifou) and 42% of fruit and field vegetables. Maré is conspicuous by its production of tubers.

However, while almost every domestic group owns at least one field, the quantities harvested vary: 25% of domestic groups generate 60% of the total volumes; each of them harvesting an average of 6.5 tonnes per year (with a minimum of 3.3 tonnes).

On the other hand, 50% of the domestic groups contribute only 12% to the total agricultural production (860 kg on average).

Livestock farming is less important to tribal households

The low numbers of certain types of livestock farming do not permit the situation to be scaled up to the level of the whole of New Caledonia.

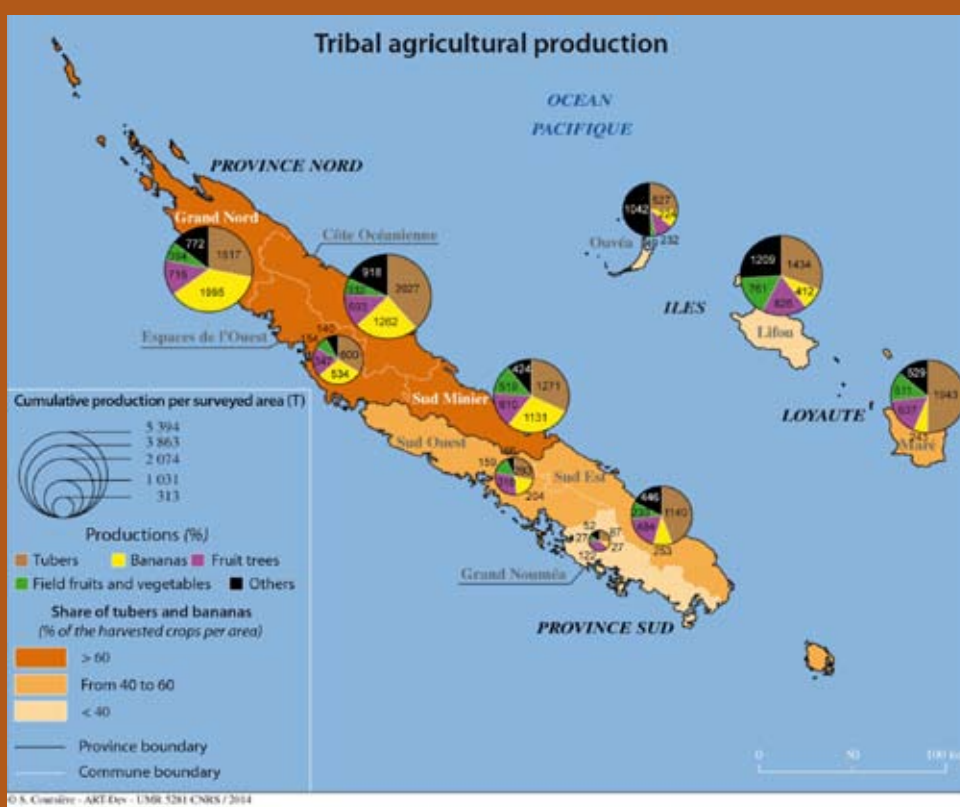
Furthermore, the large numbers of untamed cattle makes it difficult to identify owners and, consequently, the processing of cattle farming data.

Poultry farming, even though it involves only 25% of domestic groups, is the one that produces the highest number of animals across the country. With more than 30,000 hens and chickens in January 2010, a third of the poultry is raised in Côte Océanienne, which can be explained by the presence there of an economic interest group (EIG).

Other livestock farming activities (non-cattle and -poultry) involve 48% of the domestic groups. They are dominated by pig rearing with 24,000 animals owned in January 2010. Nearly two-thirds of livestock herds are on the Islands Province, mainly on Lifou. Goat farming, with 3,400 animals, is also better represented by the Islands Province.

Tribal livestock farming (in numbers of animals)

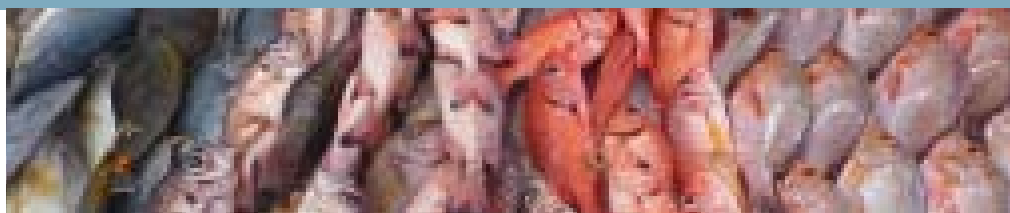
	Poultry	Pig	Goat
Espaces de l'Ouest	2,470	450	-
Grand Nord	8,510	1,750	610
Côte Océanienne	30,630	1,500	-
Sud Minier	8,440	1,660	-
Total Northern Province	50,050	5,360	610
Sud Ouest	4,900	160	-
Grand Nouméa	400	560	-
Sud Est	1,820	2,670	370
Total Southern Province	7,120	3,390	370
Ouvéa	8,180	2,840	1,250
Lifou	10,930	8,150	930
Maré	8,210	4,310	240
Total Loyalty Islands Pr.	27,320	15,300	2,420
Total NC	84,490	24,050	3,400



... 73% of domestic groups farm less than 25 acres in total

... total surface area of fields cultivated by the tribes is 3200 hectares (excluding home gardens)

Fishing and Hunting



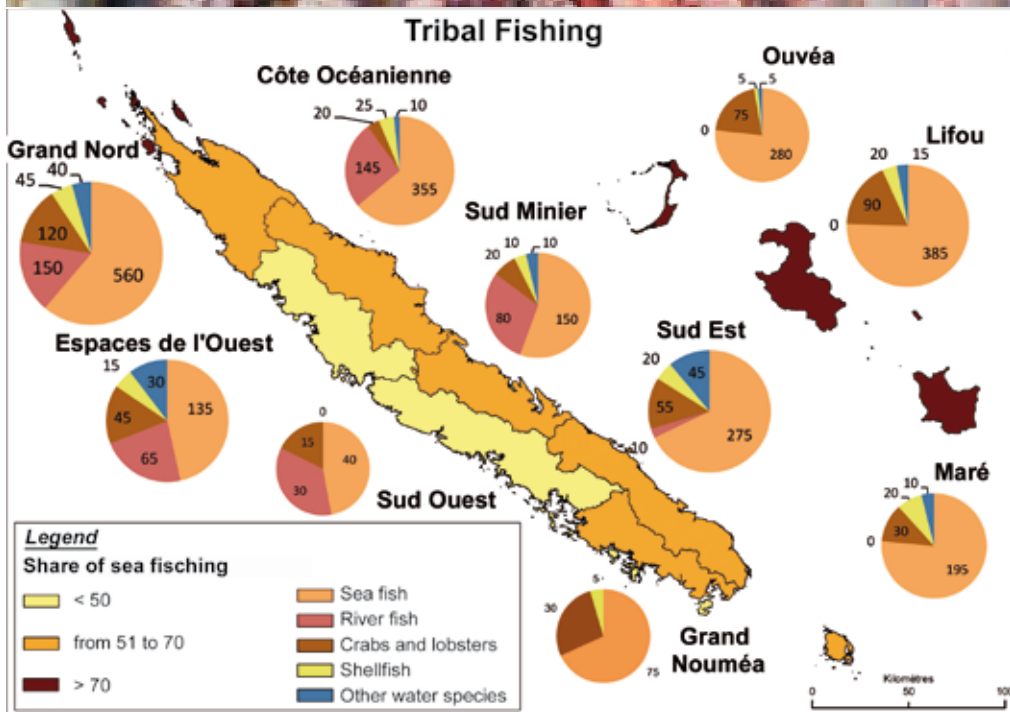
Fishing: widespread and diversified activity

Tribal fishing across all products accounts for more than 3700 tonnes of which 54% are caught in the Northern Province, 30% in the Islands Province, and 16% in the Southern Province.

Marine fish constitute 65% of the total (of which 62% from the lagoon). Half is caught in the Northern Province, especially in the Grand Nord.

The Northern Province is also characterized by a high level of river fishing (fish, shrimp, eel), with 92% of the total.

42% of crabs and lobsters are caught in Lifou and in Grand Nord. Octopuses and sea cucumbers represent only a small tonnage in comparison with other products, and their fishing is very localized. Over two-thirds of these products are caught in these three areas: Sud Est, Grand Nord and Espaces de l'Ouest.



At least one hunter in half of the domestic groups

Across New Caledonia, flying foxes and deer are the most hunted species by the tribals.

More than 60% of flying foxes are caught in the Islands Province, mainly on Lifou and Maré. 80% of the deer and 70% of pigs and native pigeons are hunted in the Northern Province. It is in Côte Océanienne that these species are most hunted. In the Southern Province, there is not as much hunting; what there is mainly pertains to deer and flying foxes. Like for fishing, the majority of animals (70%) are hunted by a quarter of the domestic groups. Half of the domestic groups account for 15% of the animals.

Fishing is practiced by 8 out of 10 domestic groups but their catches vary widely. A quarter of these domestic groups alone account for nearly three-quarters of the total tonnage, with each catching an average of 1.2 tonnes (with a large variability, ranging from 500 kg to 6 tonnes). In contrast, half of the domestic groups concerned account for only about 10% of the catch, which is 72 kg on average per domestic group.

Products of tribal hunting (in number of animals)

Zone	Pigs	Deer	Flying foxes	Pigeons	Others (wild animals, other birds, etc.)
Espaces de l'Ouest	7,180	11,120	5,590	4,200	790
Grand Nord	7,710	14,030	9,950	3,550	2,060
Côte Océanienne	9,030	17,820	6,030	5,710	660
Sud Minier	3,360	9,530	5,020	3,440	1,310
Total Northern Province	27,280	52,500	26,590	16,900	4,820
Sud Ouest	2,850	6,490	2,050	1,860	440
Grand Nouméa	910	1,570	1,480	150	220
Sud Est	570	2,920	3,120	710	600
Total Southern Province	4,330	10,980	6,650	2,720	1,260
Ouvéa	10	-	2,530	10	180
Lifou	3,580	-	28,470	2,490	10,180
Maré	2,230	-	22,150	2,230	4,370
Total Islands Province	5,820	-	53,150	4,730	14,730
Total	37,430	63,480	86,390	24,350	20,810

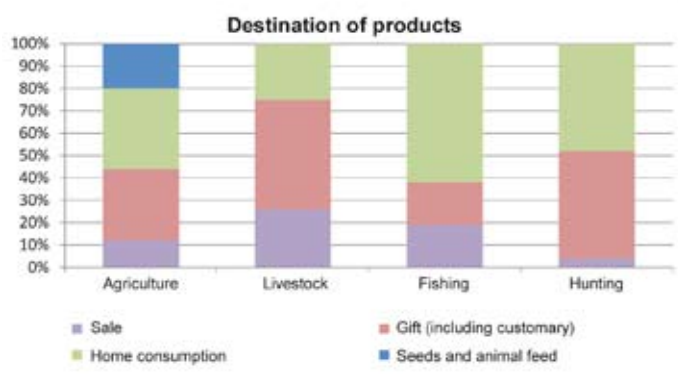


Measuring wealth: market and non-market transactions

Domestic groups give away as much as they consume

Agricultural and hunting/fishing activities fulfill diverse and essential functions in the lives of tribal families.

These activities are generally well integrated into markets and are a source of income. A quarter of the livestock volumes and 19% and 12% respectively of fishing and crop volumes are sold. Hunting products, however, are sold in very small numbers (4%).



This marketing does not necessarily take place via the 'conventional' marketing chains (wholesale markets, etc.). For example, agricultural statistics indicates that 470 tonnes of tropical tubers originating from across producer types are traded on these markets (*Memento Agricole 2010 – DAVAR*) but when all marketing methods are taken into account (roadside sales, etc.), these volumes jump to more than 1000 tonnes for tribes only.

These products are also and primarily used for family home consumption. A quarter of livestock products, a third of agricultural products, half of the hunted products and over 60% of fish volumes are home consumed. As an illustration, each domestic group consumes in a year, on average, nearly 1 tonne of plant products from its own harvest and about 400 kg of fish from its own catches. In the New Caledonian context, marked by the high price of basic foods, we must stress the importance of these products for tribal food supply.

Products are also given away daily or during customary ceremonies: for plant production and hunting, domestic groups give away as much as they consume and about 20% of fished quantities are given away. Gifts even reach a level of 50% for livestock products.

Thus, beyond just the commercial and food purposes, these products are important means for the inscription of individuals and families in the tribes' social and cultural structure.

28% of total income accrues from agricultural and hunting/fishing activities

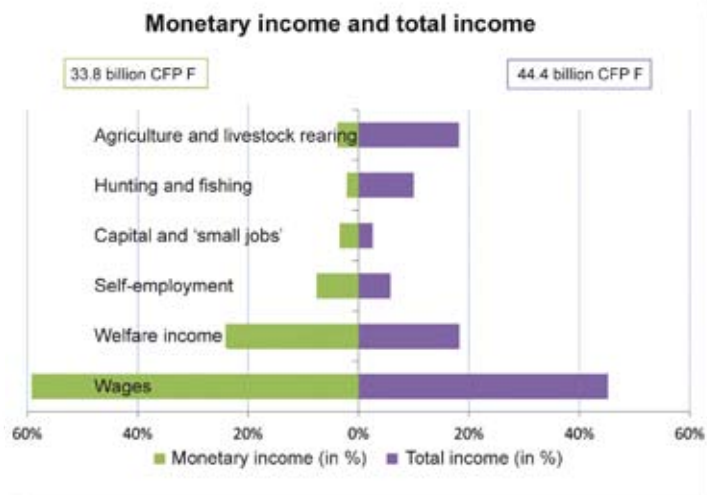
The marketing of products earns nearly 2 billion CFP F from a total of 33.8 billion of monetary income, which represents just 6%.

On average, for each domestic group, this represents 14,300 CFP F from a total of 244,000 CFP F per month. This amount is higher in the Loyalty Islands Province (19,800 CFP F) than in the Northern Province (12,600 CFP F) or in the Southern Province (10,900 CFP F).

However, by including home consumption, gifts and customary transfers*, the value of these activities rises to 12.5 billion CFP F, i.e., 28% of the total tribal income. As for domestic groups, their total income from agricultural and hunting/fishing activities thus amounts to 90,100 CFP F on average for a total of 319,500 CFP F per month. It amounts to 98,400 CFP F for the domestic groups of the Islands Province, 97,400 CFP F for those of the Northern Province and 59,700 CFP F for those of the Southern Province.

With this method of calculation, the ranking of provinces with the highest average income (agricultural and non-agricultural) varies. In terms of monetary income, it is in the Southern Province that the average monthly income is the highest, at 275,000 CFP F per month against 251,000 CFP F for the Islands Province and 227,000 CFP F for the Northern Province. However, taking into account the non-market value of agricultural and hunting/fishing products, the Islands Province (329,000 CFP F) overtakes the Southern Province (323,000 CFP F) and the Northern Province (311,000 CFP F).

Even though we cannot incorporate the value of social and cultural practices by putting a price on products given away, exchanged or consumed within the family, this calculation shows that the wealth generated by agricultural and hunting/fishing activities cannot be reduced to just their commercial dimension.



*To incorporate home-consumed products or those donated or exchanged during customary occasions in income calculations, the method values the products concerned on the basis of average selling prices charged by the tribals (average prices derived from the survey data).
 Total income = cash income + valuation of gifts, exchanges and home consumption.

Hubs of economic development and agricultural and hunting/fishing activities

Time spent on agriculture impacted by economic development except in Espaces de l'Ouest

Time invested in agricultural and hunting/fishing activities, on the one hand, and non-agricultural activities, on the other, varies depending on the location. More the time devoted to agricultural and hunting/fishing activities, less there is for other work activities. Proximity to or remoteness from an economic development hub seems to explain this to some degree.

Individuals living near hubs of development (Grand Nouméa, Sud Ouest or even Sud Est) have systems of activities where other work activities dominate over those concerning agriculture and hunting/fishing. In contrast, those from the most isolated tribes of Côte Océanienne, Maré and Grand Nord devote more time to farming and hunting/fishing.

Nevertheless, Espaces de l'Ouest stands out. The recent growth of the VKP area and a perspective of development of mining – whose long-term future is uncertain – probably explain the time invested in agricultural work, even though the average hours spent on other activities approach those of individuals in the Southern Province.

Thus, the effect of hubs of economic development do not always go hand in hand with a decline in agricultural and hunting/fishing activities.

Enhancing the value of productions that do not depend on economic hubs

As far as agricultural (excluding livestock rearing) and hunting/fishing activities are concerned, the average volumes produced by domestic groups vary according to their proximity to the hub of economic development. It is in areas considered more isolated (Grand Nord, Ouvéa, Maré) that average production is highest, while it is lowest in Grand Nouméa and Sud Ouest. The Espaces de l'Ouest nonetheless retains a level of average production three times higher than that of Grand Nouméa.

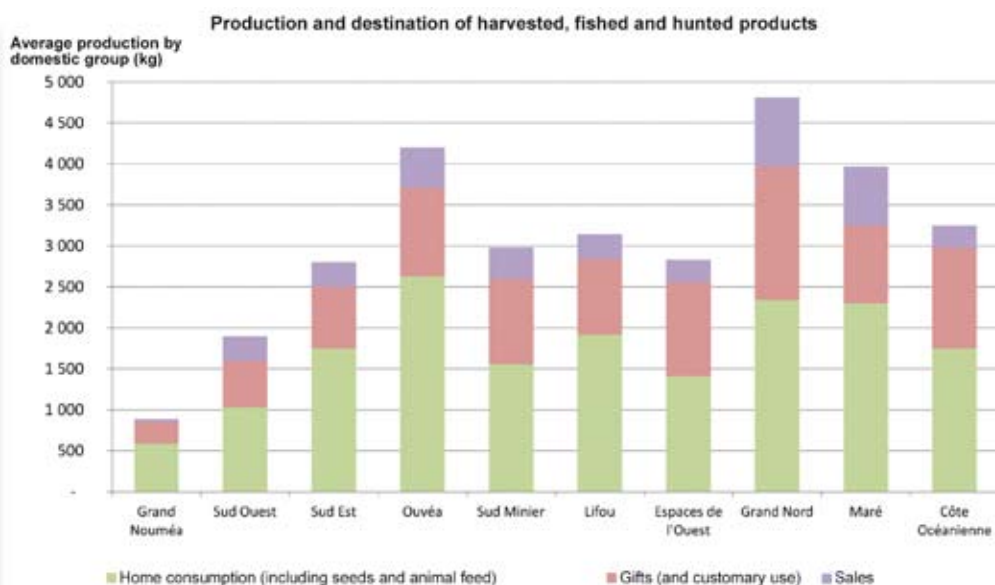
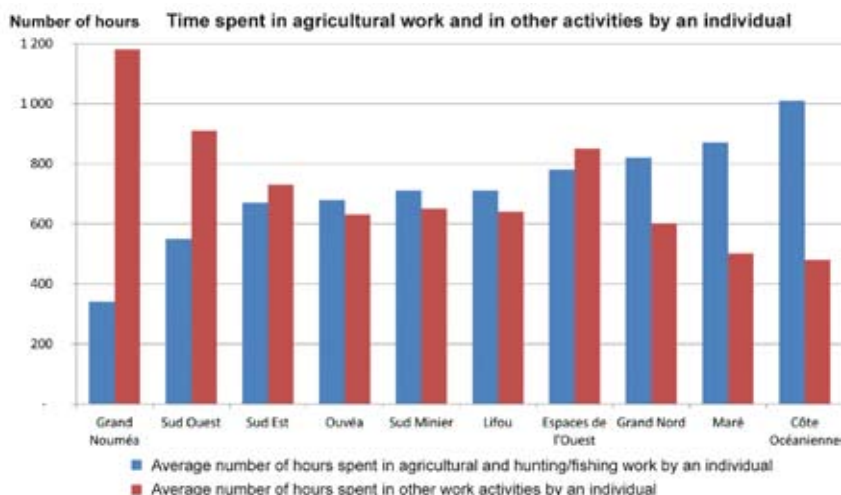
In terms of product destinations, on the other hand, all domestic groups exhibit broadly similar behavior, regardless of the distance to the nearest development hub.

Except for Sud Ouest, where domestic groups sell an average of nearly 20% of agricultural, fished and hunted volumes, this proximity, and therefore that of a market, does not mean that there is an increased marketing of products (4% in Grand Nouméa, 10% in Espaces de l'Ouest).

In Grand Nord and Maré, domestic groups tend to sell almost 20% of their production.

As for livestock, the behavior observed varies but without the proximity to a development hub being a factor. Domestic groups in the Islands Province have an average production volume higher than the rest of New Caledonia. They use livestock products mainly for gifts and customary purposes.

For domestic groups in other territories, the effect of value chains set up by the government is significant. For example, Côte Océanienne sells nearly 70% of its livestock products.



Conclusion

This study highlights tribal agricultural and hunting/fishing activities which remain only partially commercial and whose market integration varies, but which are practiced by tribal families irrespective of their place of residence.

This study takes into account all of these activities' productions, even those from very small tribal structures, and it examines as closely as possible the market and non-market dynamics of these activities. In doing so, it offers an innovative, novel and complementary perspective on the rural world as compared to that offered by existing studies. Its findings also open up avenues for public action.

The survey shows that tribal agricultural and hunting/fishing activities are at the heart of local dynamics through home consumption, maintenance of social ties and integration in the market. This allows families to obtain food security and to cover part of their monetary expenditure and helps maintain social relationships which are at the origin of tribal solidarity.

These activities are also often combined with other activities such as employment or self-employment. Regardless of whether individuals are forced by circumstances to engage in other activities or freely choose to do so, the combination of these activities with farming and hunting/fishing is a strong reality that deserves greater attention in public policy.

The study also provides information on how various systems of activities vary in their significance across the different territories. These specificities pertain to differentiated rationales, needs and constraints of the population. In a context of strong and rapid economic development, to take tribal activities into consideration is also to understand the social changes taking place and their implications.

Finally, the investigation revealed an agriculture which is a source of wealth and social cohesion for families and tribes. This agriculture can be a basis for an accelerated economic development if its own advantages are properly leveraged: proximity, environmental and cultural value of know-how and products, health quality.



Définitions :

Household: All related or unrelated persons living in the same residence, recognizing the authority of the same individual who is called the 'head of household', sharing the same meals, and whose resources and expenses are also common, at least in part.

Domestic group: Like for the household, this is a group of individuals belonging to the same unit of consumption (sharing the same meal) but who can live in separate houses within the same compound. It often consists of a single household, but can also combine two or three households (most often belonging to the same family).

In this document, we rely on the concept of a domestic group to be able to describe the population studied more accurately.

Tribe: A tribe is defined here through its geographical dimension. Each tribe corresponds to a boundary established in 1996 by the ISEE services in collaboration with the Customary Senate (*Panorama des tribus, ISEE, 1996*).

Other work activity: All remunerative activities pertaining to employment, self-employment, 'small jobs', declared or not, other than agricultural and hunting/fishing activities undertaken as part of a domestic group. Salaried agricultural employment is included in this definition.

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