Issue #54 | July / August 2020 | www.pacific-geographies.org | ISSN (Print) 2196-1468 / (Online) 2199-9104

Pacific Geographies

Research | Notes | Current Issues from the Asia-Pacific Region

Vanuatu's 40th anniversary

Review of the first decade of political independence from 1980 to 1990

CONTENTS #54 | July / August 2020

Integration and segregation in the evolution of agricultural development policies in New Caledonia - 04

Vanuatu's 40th anniversary: Review of the first decade of political independence from 1980 to 1990 – 15

Archaeological studies of shell-remains at Punangatu – 25

EDITORIAL

Dear readers,

today, decolonisation is still a challenge for many countries in the world. After a recent putsch in Mali, in West Africa, there were demonstrations requesting the full departure of France from the former French colony. In the South Pacific overseas territory of New Caledonia, citizens were called to vote in a second referendum on political independence from France, narrowly choosing to reject it for the second time, but with an overwhelming number of Melanesian inhabitants voting 'Oui'.

Vanuatu, a neighbouring country, celebrated its 40th anniversary of independence in July 2020. One article of this issue of "Pacific Geographies" looks back at the first decades of this young nation. Gilbert David critically discusses early development policies, which established the foundations for economic and social viability in the face of constraints imposed by insularity.

Séverine Bouard, Jean-Michel Sourisseau and Benoît Zenou, writing on "Integration and segregation in the evolution of agricultural development policies in New Caledonia" deal with the two concepts of integration and segregation in agrarian change, asking how these can provide original theoretical tools to analyse the relationships between agriculture and rural societies in New Caledonia with its unique patterns of agrarian development.

A research note by the Ni-Vanuatu student Lucas Sarvanu and the geographer Matthias Kowasch deals with the shells of Punangatu on the island of Futuna (Vanuatu). Sarvanu identifies the different shells collected, and classifies them by species according to different sedimentary layers.

Finally, we are happy to introduce the Austrian South Pacific Society (Österreichisch-Südpazifische Gesellschaft, OSPG). The Society regularly organizes scientific lectures and cultural events in Vienna.

Elisabeth Worliczek (University of Natural Resources and Life Sciences, Austria), the chairman of OSPG, will join the Editorial Board of Pacific Geographies, and presenters will have the opportunity in the future to submit a paper to our journal, based on their OSPG lecture.

We sincerely hope you enjoy your readings of this issue.

The managing editors, Matthias Kowasch & Michael Waibel

Pacific Geographies

Pacific Geographies (PG), ISSN (Print) 2196-1468 / (Online) 2199-9104, is the peer-reviewed semi-annual publication of the Association for Pacific Studies. It is published through the Department of Human Geography at the University of Hamburg.

The PG provides an interdisciplinary academic platform to discuss social, cultural, environmental and economic issues and developments in the Asia-Pacific region.

In order to uphold scientific standards, the PG is implementing a peer-review process. Articles marked as „scientific papers" have been peer-reviewed by two external reviewers. Articles marked as „research notes" have been peer-reviewed by one external reviewer and a member of the editorial board. All other articles have been reviewed by the editorial board. Contributions receive a Digital Object Identifier (DOI).

The Association for Pacific Studies (Arbeitsgemeinschaft für Pazifische Studien e.V., APSA) was founded in 1987 at the Department of Geography of the University of Technology in Aachen. Activities include workshops, conferences, public lectures and poster exhibitions. The book series PAZIFIK FORUM was initiated in 1990. In 1992, it was complemented by the journal PACIFIC NEWS. APSA-Members receive this journal at no cost as a membership benefit.

The APSA sees itself as one of the largest scientific networks in Germany for academics and practitioners with an interest in the Asia-Pacific region as well as academic exchange.

IMPRINT

Please submit your manuscript to:
managing_editors@pacific-geographies.org

Association for Pacific Studies e.V. c/o
Department of Geography
University of Hamburg
Bundesstrasse 55
D-20146 Hamburg, Germany

COVER PICTURE
Impression from celebration of Vanuatu's Independence Day in 2019
Source: © Matthias Kowasch

Integration and segregation in the evolution of agricultural development policies in New Caledonia

Séverine Bouard[1], Jean-Michel Sourisseau[2], Benoît Zenou[3]

[1] IAC, Institut Agronomique néo-Calédonien, Équipe Territoires, Acteurs et Usages (TERAU), Centre de recherche Nord – Thierry Mennesson, BP 6, 98825 Pouembout, Nouvelle-Calédonie, E-mail: bouard@iac.nc.

[2] CIRAD, UMR ART-DEV, F-34398 Montpellier, France, ART-DEV, Univ Montpellier, CIRAD, CNRS, Univ Montpellier 3, Univ Perpignan Via Domitia, Montpellier, France, E-mail: jean-michel@cirad.fr.

[3] CIRAD, socio-économist, ex UMR ART-DEV, CIRAD, currently Human Resources Director, Montpellier Méditerranée Metropolis, 50, place Zeus CS 39556, 34961 MONTPELLIER CEDEX 2, Montpellier, France, E-mail: b.zenou@gmail.fr.

DOI: 10.23791/540414

Abstract: Relationships between agriculture and rural societies raise controversies that question development models. Dichotomous views dominate the debate: small and large structures, inclusive or exclusive of agriculture, etc. This paper identifies how concepts of integration and segregation provide original theoretical tools for entering into these debates in depth. The theoretical framework was tested on the case of New Caledonia, through an analysis of rural development policies. This emblematic example of a colonial settlement is interesting. It offers public policies based on segregated models of development, but which pursue, at the same time, the global objective of overcoming the historical segregation between communities, land-use, etc. A field study enabled the authors to highlight the strategic dimension of the segmentation of development policies and territories. On a local scale, a study of Kanak development strategies showed that the boundaries between these different kinds of development territories are places where new development models and innovations can arise. Despite some limitations, the theoretical framework was particularly suited to understanding the historical and current transformations of the archipelago and offered original prospects for generalization. Mainly, the heuristic strength of the framework was not based on opposition, but on the identification of connections between integration and segregation.

Keywords: Integration, segregation, development policies, family farming, New Caledonia

[Submitted as Scientific Paper: 21 June 2020, acceptance of the revised manuscript: 02 September 2020]

Source: © IAC/Chevreux.

Figure 1: Livestock on private land in Pouembout.

The changes affecting relations between agricultures, ruralities and societies give rise to exclusions, instability, and political and social conflicts. The aims of the Millennium Development Goals (United Nations 2000) bear witness to the international awareness of these challenges, and the urgent need to respond. Understanding the transformations occurring in the Souths, and the solutions proposed to enable their societies to develop, are often the subject of dichotomous visions. For instance, the oppositions between "small" and "large" farms or between family and entrepreneurial agricultures fuel debates on the competitiveness of production structures (Hazell et al. 2007; IAASTD 2009; Timmer 2009); the inclusive or exclusive nature of agricultural models lies at the heart of the representations portrayed by the World Bank of rural dynamics (World Bank 2007; Gibson-Graham 2010; Losch et al. 2011).

More recently, two representations of development likely to embody or cross these dualities have emerged from debates focusing on land-use planning: integration and segregation (I/S) (Hubert & Caron 2009; Hubert 2010). They are sometimes explicitly formulated, but are usually implicit and hinted at in the models proposed to describe evolutions in rural worlds, and they thereby often divide researchers. For some, development takes place through the specialization of areas and forms of production for intensification, whatever the cost of the compensations to be provided elsewhere, and through social treatment of the negative effects of that "segregation". For others, "integration" of the multiple functions assigned to agriculture, but also of the communities and identities present in the same territory, is globally preferable. Beyond the economic advantages it procures, it maintains a social fabric and contributes to the rational management of territorial resources and preserves local specificities.

This scientific paper proposes to investigate how these concepts can be used to describe and understand observable phenomena (spatial, societal, cultural, etc.). It also examines how they constitute, through their dialogue, a logic that fashions how to conceive development. Lastly, it looks at the leads they offer for renewing the existing dual approaches and visions, or even for going beyond them. To that end, after defining what we mean by integration, segregation, and the nature of their dialectic relationship, we illustrate the scope and relevance of this theoretical tool on a case study: the analysis of rural development policies in New Caledonia. Despite few limitations, the theoretical grid proves to be suited to understanding the historical and current transformations of the archipelago. The linking of the two concepts proves to be heuristic for the proposed case study and offers some interesting prospects for generalization. The strength of the analysis lies in showing the porosities and connections that exist between integration and segregation processes.

Integration and segregation as a theoretical tool: towards a more systemic analysis of development

Integration and segregation (I/S) concepts have long been used by many researchers, to both describe and understand concrete and visible phenomena in the Souths, and to reflect together upon the transformations and recompositions occurring. Many examples of these uses exist in approaches as diverse as the articulation of rural and urban (Hubert 2010), the analysis of economic mobilities (Léonard 2005), cohabitation between livestock farming and agriculture (Gautier et al. 2005), the economic and demographic inequalities of territories (Sencébé 2009), or more widely the revisiting the models of agricultural development and of its boundaries (Van der Ploeg 2000; Caron & Le Cotty 2006).

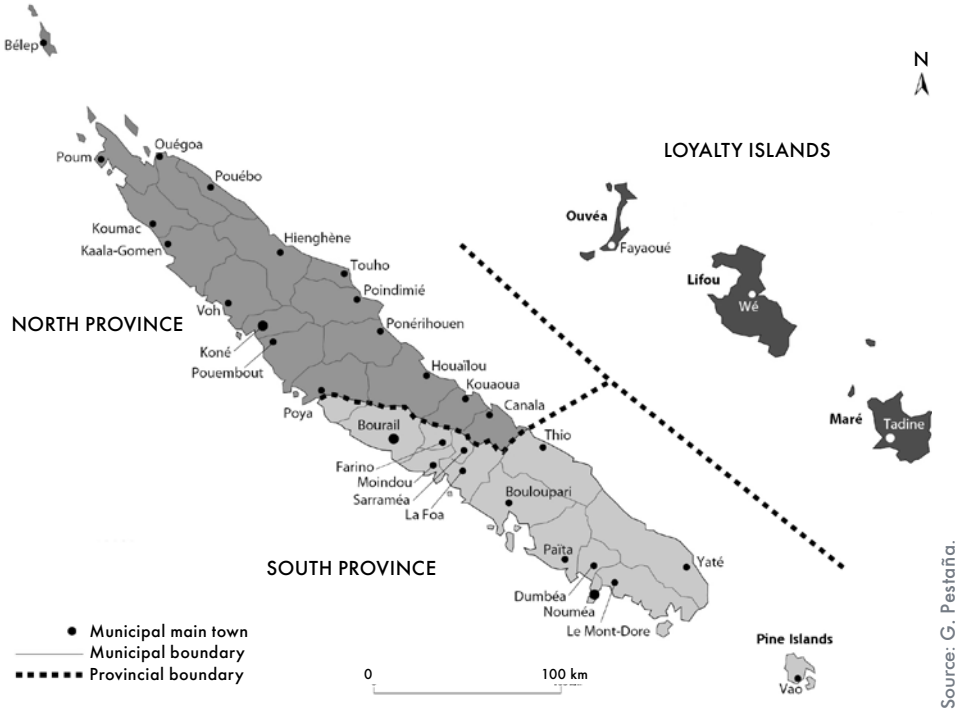


Figure 2: Provinces and municipalities in New Caledonia

The integration and segregation concepts, derived from the common language, offer the advantage of showing complex processes, whilst their opposition, which is highly meaningful too, makes it possible to describe societies and their environment.

Two main fields can be identified:

• Firstly, the geographical delineation of development spaces uses integration and segregation concepts (or stratification, segmentation, fragmentation), either to give greater porosity to two spaces or make each of them independent and autonomous. For example, in a context of forestry management, definition of the boundary of a protected area is supposed to meet the challenges and objectives that justify that area and tends to constitute a diversified but unique space. But, can one then imagine that the evolution of practices and knowledge make them integrated spaces or spaces to be integrated?

• Secondly, integration and segregation qualify social phenomena. Indeed, the effect of formal and informal institutions, along with cultural and community practices, is to differentiate between or strengthen social identification processes of individuals, but they also guide the policy choices that go hand in hand with the main structural transformations of our societies. These policy choices sometimes lead to the exclusion or even the ranking of people (up to Apartheid), or, conversely, to integration, understood as being the cultural and social desegregation of peoples and populations.

These categories derived from the common meaning, call for us to distance ourselves from their normative dimension, which often leads to integration being seen as positive for development, and segregation as negative. In fact, from a semantic viewpoint, the terms "integration" and "segregation" refer to theories and approaches that differ from one discipline to another. Consequently, researchers sometimes use others that refer to similar states/dynamics and avoid any connotation of the words used. For example, they prefer to use connected terms such as inclusion (Zidouri 2008) or desegregation (Morin 1966) for integration and exclusion (Elias & Scotson 1997; Moustier & Anh 2010), stratification (Hubert 2010), segmentation (Vieillard-Baron 2006; Veillard-Baron & De Almeida Vasconcelos 2004) or fragmentation (Hobbs et al. 2008) for segregation.

Despite this semantic blur, the integration and segregation concepts prove useful for describing the processes at work and for adopting a more systemic vision of transformations. However, if one wishes to use these two concepts as a theoretical tool, it seems to us that three limitations need to be overcome in the analysis:

• Firstly, a temporal alternance can be seen between integrationist and segregationist logic. Likewise, the use of segregation as a tool may enable integration. This reversibility makes the analysis more complex: what might appear to be integration may ultimately prove to be segregation, the two working together and not in a dichotomous manner.

• Secondly, the terms integration and segregation refer to different perceptions depending on whether one is taking a static approach (description) or a dynamic approach (analysis of transformations) to the phenomena being studied. While integration or segregation can be considered as end points, we prefer to see them here as means and/or processes making it possible to achieve other objectives (well-being, poverty alleviation, etc.).

• Thirdly, depending on the analysis scale adopted by the researcher, the same phenomenon can be described as integrated or segregated.

In order to overcome these difficulties, adopt a broader vision of the processes and enable a multidisciplinary discussion involving the same concepts, the precision of the meaning one gives to these terms in this study becomes a prerequisite for the analysis.

In a broad perception of integration, it refers to a logic seeking to associate, either intentionally or unintentionally, a space, a resource, a stakeholder or an idea, with another space, another resource, another stakeholder, or another idea.

Conversely, segregation qualifies the dissociation, either intentionally or unintentionally, of a space, a resource, a stakeholder, or an idea from another space, another resource, another stakeholder, or another idea.

Lastly, the relevance of using the integration-segregation pair as a theoretical tool for understanding rural dynamics seems to us depend on the validation of three hypotheses.

1. Rather than opposing integration and segregation in a dichotomous way, they should rather be seen as facets of a prism making it possible to reveal and characterize phenomena.

2. The logics of integration and segregation can appear in a process of action and reaction; each integration process partially produces some segregation, and vice versa, making it possible to understand complex logics better.

3. The limits and boundaries defining integrations and segregations are porous; that porosity is reflected in recompositions.

By looking at the boundaries, it is possible to elucidate hybridization phenomena. These three hypotheses were tested as part of an analysis of rural development in New Caledonia, particularly Kanak. The Caledonian situation appears to be particularly illustrative of both the explanatory nature of an integration/segregation dialectic affecting spatial, economic and social aspects at the same time, but also of the need to nuance the apparent dichotomy between the terms. Indeed, the modern history of the European colonization of this territory is based on military, economic and territorial conquest by segregation. The settlement been marked by the convict prison, agricultural development (in a pioneer land grab model) and mining. It notably led to the development of several forms of segregation towards the Kanak indigenous world: spatial, economic and social (Saussol 1979; Merle 1995; Merle & Muckle 2019). Today, recognition of those segregations and the complexity of their effective impacts (positive and negative) define an original model of negotiated decolonization. The political agreements of Matignon-Oudinot (1988) and Nouméa (1998) in fact sealed the permanency of a deep duality between Caledonians of European and Kanak origins, but also the need to move towards a community of destiny respectful of the differences between communities. By sharing the country and its government, by opting for catch-up policies in relation to the Kanaks, the agreements generated new forms of segregation, which were seen as necessary to the integration of people, sectors of activity and rural territories.

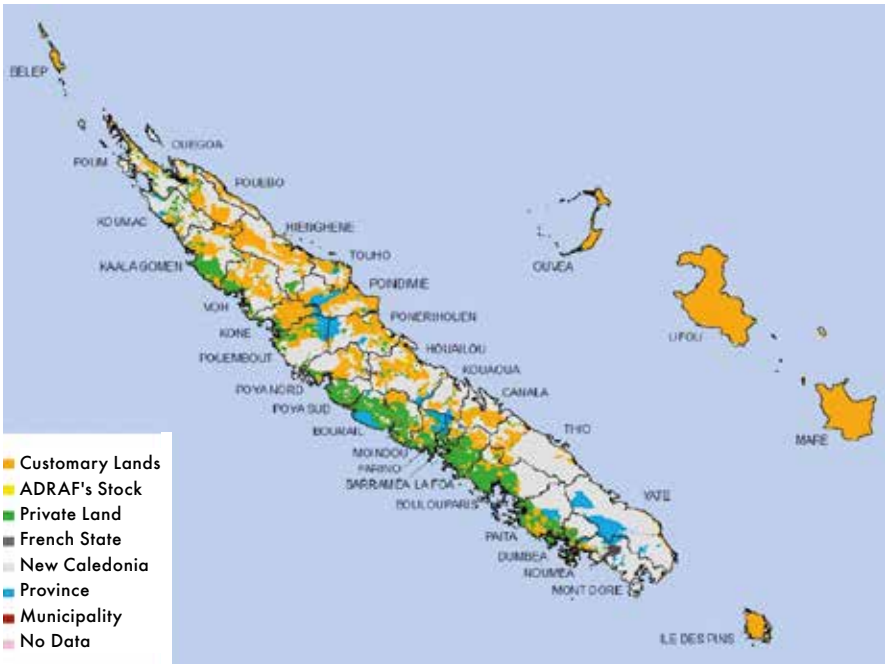
The agricultural and rural policies of New Caledonia in the integration and segregation prism

Historical context

Following penal, agricultural and mining settlement under State control (1853 – 1946) and the switch to Overseas Territory status (1946 – 1965), the 1970s and 1980s were marked by pro-independence claims, with a toughening of the conflict verging on civil war, called the "events". Seeing the stalemates of armed struggle, the two parties (loyalists and separatists) agreed to a negotiated solution, which took the form of an institutional innovation establishing a sui generis status. Through the Matignon Agreements (1988), the French prime minister at the time, Michel Rocard, undertook to create what could be called a "federal state" with its own congress which coordinated the actions of the three provinces. By way of the electoral boundaries, two of them, mainly inhabited by Kanaks (North and Loyalty Islands), found themselves with pro-independence elected authorities, whereas the third concentrated around Nouméa (South), remained anti-independence.

The competencies of the French State were limited to sovereign competencies, to which were added labour law, and secondary and higher education. The Territory (New Caledonia), had the authority to draw up its budget, for taxation and for work of territorial interest. Financially, the French State was committed to providing major financial means to the new local authorities and proposed that the financial product from nickel mining should complete its public transfers. The North and Loyalty Islands provinces benefited from substantial financial resources via an allocation formula that was favourable to them in the drawing up of development contracts between the French State and the four authorities. In the North Province, the purpose of the four development projects that followed on from each other after 1990 was to promote conditions for development and rebalancing, through an infrastructural catching-up process.

The provisions of the Matignon-Oudinot Agreements, which were initially due to run 10 years, were ultimately renewed in 1998 for a further 15 years by the Nouméa Agreement. The latter further strengthened the powers of each province and established a collegiate government.



Source: ADRAF.

Figure 3: Land distribution in December 2019.

At the end of the emancipation process enshrined by the agreement, the role of the French State was confined to meeting its financial and military obligations. The Nouméa Agreement can therefore be seen as an attempt at economic and social integration in response to the segregation that was operated in the past, notably seen through the placing of the Kanak people in reservations and the convict prison for the first colonialists who participated, despite themselves, in this settlement process.

> "The time has come to recognize the shadows of the colonial period, even if it was not devoid of light. […] Some clans lost their name when they lost their land. […] population movements damaged its fabric (Kanak social organization), ignorance or power strategies all too often led to the negation of the legitimate authorities. […] To this denial of the fundamental elements of Kanak society, were added restrictions on public freedoms and a lack of political rights." (Nouméa Agreement, preamble)

In this search for an integrationist vision, two principles are noteworthy.

"Rebalancing" seeks to work on land use planning by developing infrastructures more uniformly throughout the territory (particularly in the North) and to achieve socio economic objectives (distribution of wealth and power).

> "Development contracts have been concluded between the State and the provinces for the joint funding of actions intended to achieve development objectives whose principles are indicated in the following article, by taking provincial specificities into account […]: 1.Facilitate access to all initial and further training and adapt that training to the particularities of the territory, such as they arise, notably, from the diversity of cultures […]; 2. Promote a rebalancing of the territory in relation to the agglomeration of the principal town, and improve infrastructures to provide access to remote populations […]; 3. Improve living conditions for the populations throughout the territory […]; 4. Promote the Melanesian cultural heritage and that of the other local cultures […]." (Matignon Agreements, 1988, Article VIII).

It is thus that it seemed necessary to territorially segregate policies and resources in order to implement an integration policy over the long term. What we could call "positive segregation" was marked by various emblematic measures, among them which ones:

- the implementation, already mentioned, of an allocation formula that budgetarily favoured the pro-independence provinces (North and Loyalty Islands),
- the affirmation of the territorial sovereignty of each province, which implemented different and adapted development policies,
- and the freezing of the electorate, so that only those who participated in the vote on the Nouméa Agreement in 1998 will be able to vote for sovereignty

Figure 4: Agriculture on private land in Pouembout.

in 2014, thereby avoiding any immigration strategy for election-minded purposes.

The Nouméa Agreement is also marked by the idea of a "common destiny", which invites the entire population to construct common development. By acknowledging the harm done by colonial settlement – notably to the Kanak people – this integration marked a break for New Caledonia, which was to acquire identifying symbols and display its unity.

"Identifying symbols of the country, name, flag, anthem, currency, banknote illustrations, must be sought together to express the Kanak identity and future sharing between all" (Nouméa Agreement, art. 1.5).

The two principles of rebalancing and common destiny particularly enabled the recognition of categories of the population that had previously been marginalized, leading to the introduction of differentiated public policies. By transferring numerous competencies to local authorities, the Nouméa Agreement thus responded to the demand for autonomy for the Kanak people, whilst strengthening cooperation between the political parties in setting up a collegiate government (Kohler 1991; Forrest & Kowasch 2016).

But the placing in perspective and in opposition of these integrationist and segregationist visions in the case of New Caledonia reminds us that they only correspond to a representation of an otherwise more complex reality, in which limits and boundaries remain mobile and permeable.

The explanation of Caledonian agricultural policy shows that this integrationist vision, which makes sense politically and which accompanies, without ever replacing it, the growing strength of the sustainable development concept (Sourisseau et al. 2010a), does not escape from the weight of history and the persistence of segregations. Consequently, the Caledonian case illustrates the will – made necessary by path dependencies – to go beyond this integration/segregation duality by proposing other development paths.

Agricultural policies: towards positive segregation for eventual (long-term) integration?

Before 1988, only Caledonians of European origin were offered an agricultural policy that met their expectations and needs. Indeed agriculture, which was marked by an assisted economy (Freyss 1995) and strong urbanization between 1965 and 1984, lost some of its importance and clout in GDP (falling from 10% in 1960 to 2% in 1984), and durably became a sector of low strategic importance to the benefit of nickel mining, which took off considerably over the same period. In this situation, European cattle farming on large farms occupied over 90% of the UAA (Useful Agricultural Area), leaving the Kanaks with a food production agriculture that was, at best "improved". Policies were thus mainly geared towards the development of a more intensive cattle farming agriculture (notably European) with the will to "publicly control the supply chains and prices at the end of the period" (Pillon 1990; Sourisseau et al. 2010b:55), and timidly assisted Kanak livestock farming. At the same time, as early as the 1970s, growing urbanization enabled the development of intensive market gardening structures, located around Nouméa and controlled by farmers of European origin, who had recently arrived in general. Lastly, the "commercial" sectors, which potentially faced competition from imports, benefited from protection via adaptable customs procedures mastered by the producers involved. Between 1970 and 1990, the duality of agricultural policies asserted

itself by trying to respond to the increasingly loud and vociferous claims of the Kanak people, notably regarding land redistribution. But in the end, only economic measures were proposed, while the claims were mainly political.

Thus, the agricultural (and more widely, economic) integration that was extolled and displayed from the 1970s onwards, was more a synonym of insertion, inviting the Kanaks to reproduce European practices and to subscribe to the French arsenal of agricultural modernization aid. From the end of the 1980s, the insertion gradually led to the development of Kanak family farming supported by local policies that redefined places and roles of agriculture. Productivity and economic viability criteria were not the only objectives targeted by the politicians; the concepts of on-farm consumption, identity and maintenance of social functions of Kanak agricultural production had a say in the matter.

After once symbolizing the domination of the Kanak world by the colonial power, land tenure policy became emblematic of this change in direction following the Matignon-Oudinot Agreements. For instance, since 1988, 132,856 ha have been returned to the customary lands (ADRAF 2019), in the name of links with the land (Mapou 1999; Le Meur 2012). Lastly, since 1978, land distribution between private and customary lands has been completely rebalanced. Today, on Grande Terre, the two statutes amount to 292,470 and 313,910 ha respectively (ADRAF 2019), as opposed to 402,500 and 168,000 ha in 1978. This is a considerable reform, but it does not challenge spatial partitioning into land areas of very different status. In particular, customary lands escape the market, since they are inalienable, unassailable, unseizable and non-transferable, and thereby entail specific development challenges and methodologies.

The types of agriculture practiced on these two types of land, private and customary, are different in many aspects. Despite the rebalancing in terms of surface area, the 2012 general census of agriculture shows that these agricultural territories are home to distinct models. The Total Used Agricultural Area occupied 13% of the total surface area of New Caledonia, i.e. 182 026 ha, of which 96% of this UAA was pastureland, the support of extensive livestock farming directly resulting from the logics of agricultural colonisation, with a high concentration on the west coast of Grande Terre, and the South Province.

The general census of agriculture of 2012 shows that 62% of farms are located on customary land - and therefore essentially Kanak – but concerned for barely 18% the UAA. Another study on agriculture on customary land shows that the GSA and official statistics underestimates Kanak family farming and production, in particular because it concerns very small areas per family, technical itineraries are low input consumers and have self-consumption and donation as their primary functions, with only 12% of agricultural products actually being sold (Guyard et al. 2013). This wide survey conducted in 2011 of 1,786 Kanak households representing 12.5% of the population residing in Kanak villages (also named "tribes") showed that almost all tribal families have at least one field, but that the quantities produced vary considerably (25% of the families in tribes produce 60% of the agricultural volumes).

Source: IAC/Coulon.

Figure 5: Small scale Kanak family farming on customary land.

Source: IAC/Chevreux.

Figure 6: Yam plot and small-scale Kanak family farming on customary land.

Above all, this study confirmed the economic importance of farming and hunting/fishing activities for tribal populations: agriculture generated a gross output of € 65 million . The amount of time devoted to these activities, the volumes produced and exchanged, and their contribution to incomes, food and social capital leave no doubt: agriculture, hunting and fishing continue to occupy a central place in the economy (in its broader meaning) of the tribes in all parts of the territory, including of those in close proximity to urban centres and development hubs (Bouard et al. 2018; Bouard et al. forthcoming). Even though it has historically been marginalized, confined to unfavourable land, Kanak family farming continues to play a key role in household food security, non-commercial exchanges, the local economy and the maintenance of customary, family and social ties.

In fact, local development policies primarily targeted these customary lands, particularly lands recently attributed in the form of local private law groups (GDPL) , which were intermediate zones in which customary law prevailed, but where development policies were more open. The request for an OGAF programme is issued by one or more municipalities. The project is based on a programme of specific actions, for a duration of three to five years and makes it possible to provide aid of an incentive nature (premiums, contracts, subsidies, etc.). The operation is monitored by local committees and the instrument, which brings together several donors but also local stakeholders, is based on a participatory type project approach (is not so far of the Leader and Leader + programmes funded by the European Union). Since 1993, six OGAFs have been implemented in eastern New Caledonia, where most of the customary lands re-attributed under the land tenure reform are concentrated (see figure 7). On average, project funding amounts to € 1,613,530. The provinces are the main donors and their share of the funding increases over time

More specifically in the North, the development code explicitly recognizes three categories of aid: aid to enterprise, aid to insertion projects (rebalancing) and aid to traditional projects. This distinction thus strengthens segregation between the different forms of production, forcibly segmenting functions and objectives different from agricultural activity, whilst enabling recognition of the diversity of situations and the particularity of Kanak farms. These changes strengthen the dual nature of agricultural policies. On the one hand, there are measures seeking to strengthen investment aid and price protection for European type agriculture and, on the other hand, local, participatory development operations that succeed to varying degrees in promoting Kanak family farming. This assumed duality does not do away with inequalities and is characterized by a low budget devoted to local development (barely 10%) in order to support "small" Kanak farmers. The rigidities and path dependencies arising from settlement are revealed by these dynamics and the choice of a common destiny made it even more difficult to overcome these differentiations. As of then, rational and not exclusive dualism appeared as a credible solution.

Social recompositions in the rural world: moving beyond integration/segregation duality

Rather than using them to qualify development statuses, which are normatively judged positive or negative, the integration and segregation concepts

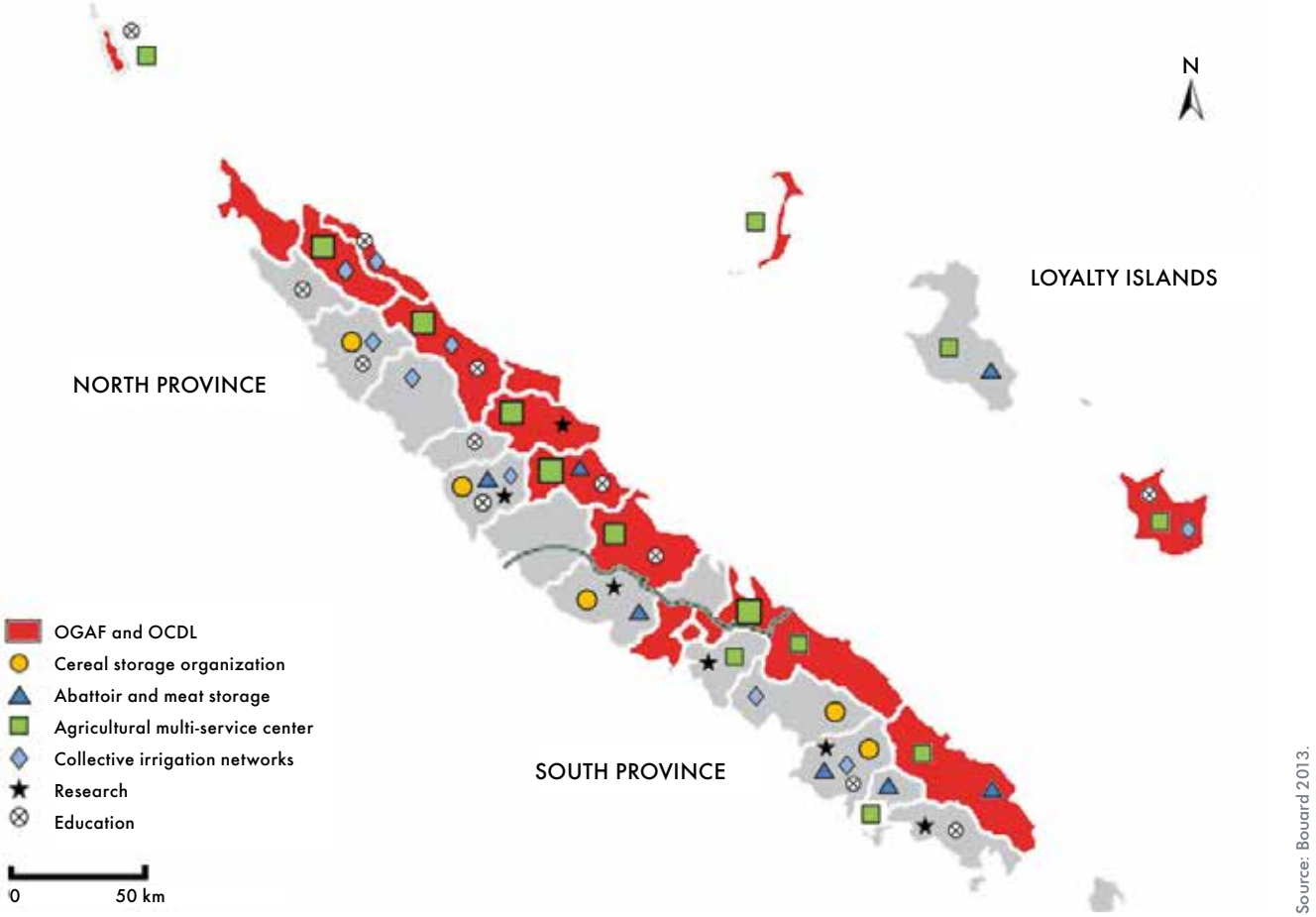


Figure 7: Collective or public agricultural infrastructures.

seem useful for analysing social and spatial recomposition processes.

The overlapping development models already described, and the economic strategies and agricultural practices underlying them, illustrate the merits of using this theoretical tool dynamically and urge us to look more specifically at the flows that cross boundaries and upturn the opposition between integration and segregation.

The ascendancy of Kanak enterprise capitalism

The recent internal dynamics of the Kanak world bear witness to the rapid changes and on going hybridization between the separate representations of development derived from colonialization. Up to a few years ago, and despite some rare experiments arising from militant actions in the 1970s, the world of enterprise automatically excluded the Kanaks from responsibilities. The economic elite, concerned for their prerogatives, maintained an enterprise model inherited from a trading post mind-set, functioning on a strong connection with politics and on high prices enabled by public transfers, notably through the strong presence of a State and local administration. The employers, in a "segregationist" reflex, considered that it was for the Kanaks to take on board their enterprise principles, arguing that custom and its social implications were hardly compatible with efficient capitalism.

However, following the provincialization and opening up of economic policies to the Kanaks, the latter progressively, but very rapidly, adapted to the opportunities offered by a favourable economic climate. They modified some of their behaviours while maintaining a close link with their community traditions. To illustrate this point, we present two examples from the mining world, though they participated in and had a very direct impact on rural dynamics.

The first involves a haulage company developed and managed by a clan as part of the metallurgy works in the North (Poithily 2010; Sourisseau et al. 2017). In order to ensure the profitability of their activity, its managers ran the company in line with western codes and techniques. Be that as it may, the managers and employees maintained a redistributive logic with the families of their community once dealings with the other partners had been ensured. Two types of partnership relations, two management methods were established, depending on whether the company was dealing with its external customers in the search for and performance of contracts, or with its allies and families for the mobilization of the work force (which could amount to being arbitrary), then for the use and redistribution of income from the activity.

The second example, along the same lines, concerned SMSP which decided to contract out mineral ore loading at one of its sites to two companies, Watemi and Mitewa (Sourisseau et al. 2006). Rather than basing itself on the conventional job market and drawing up individual contracts, SMSP dealt rather with a collective based on the service rendered. This arrangement made it possible to always have an available work force to meet its needs and enabled the clans involved to capture the earnings from loading, while maintaining a collective work distribution logic. Regularity and diligence, which are difficult to obtain on an individual basis, were thus managed on a group scale. Therefore, the clans were able to organize themselves so that the subcontracting work was ensured,

whilst keeping the activities they traditionally undertook in their community.

Changes in the functions of agricultural activity and the participation of Kanak households in local development programs

Kanak agriculture, which is fundamentally geared towards family and clan consumption and towards maintaining interpersonal and customary relations between the families and the clans, barely expresses its market functions. However, this apparent inertia, faced with the progression of salaried activities, masks some contradictory dynamics that lie at the core of tensions that are internal and external to Kanak society, between aspirations and insertion (market and social) and community retrenchment.

The trajectories and strategies of two farmers illustrate some facets of these forms of hybridization. These two farmers were members of a GDPL and had been able to recover a certain number of land rights enabling them to develop a professional and commercial agriculture. They were both invited to become members of a local discussion committee opened by an OGAF in their municipality; they did not make the same choice.

Case A:

Household A practised "professional" and commercial agriculture. It had been specialized in yam and paddy taro production since 1994, and also had a small mowing company, with which the farmer fulfilled the needs of the municipality for roadside maintenance. By investing in a commercial agricultural activity, the household gradually withdrew from the social activities undertaken by its clan and its tribe, along with the customary ceremonies. As highlighted by his wife: "We reached a decision […], you have to manage between social obligations and work." So, the family is represented on customary occasions by a brother or the wife.

Following the implementation of an OGAF programme, the household became involved in one of the local discussion committees opened by the project. As for all the other social activities, it was the wife who attended the meetings. She had access to the information needed to draw up micro-projects funded by the territorial development programme. She then passed on this information within her clan to favour their installation on new plots of land. Once the plots for the other members of her clan set up on the perimeter started to produce, the couple preferred to withdraw from the cooperative to leave room for the new producers.

Access to customary land (reserve and also GDPL) can become a problem when the agricultural activity is more market-oriented and involves a larger area. But in this case, the Kanak household negotiated the coexistence of different types of projects with a more or less commercial and professional vocation within the same land area, the GDPL of the clan. By facilitating access to micro-projects for the other members of their clan or of their tribe, who did not practise professional or commercial agriculture, the household legitimized maintaining its own agricultural practices and the land area it used for them.

Case B:

The farmer of household B first worked as a welder for companies in Nouméa. After the events in the 1980's, he decided to set up as a farmer, on the lands of his clan. He began by multiplying yam seeds, then he branched off into very common yam production for consumption in the 1990s. He enlarged his areas but, after five years, his family made him leave the family reserve. He had to hire plots, first of all several kilometres from his farm, then nearby. For the last 10 years, being unable to farm the customary land of his clan, even on the GDPL, he has farmed some customary lands located at the entrance to the valley where he lives. Since this dispute arose in the 1990s, the relations with his clan and the rest of the tribe have relaxed.

As in the case of household A, the farmer became a member of one of the local committees opened by the territorial development programme, but he left the committee after the third meeting. He disagreed with the objectives and the approach of the project. His trajectory shows that he was first spatially excluded by his clan and his participation in the local committee was also marked by a process of exclusion. Although often cited by many as an example of success in Kanak agriculture, farmer B was alone in promoting the specialized, professional and commercial agricultural model.

These examples show how stakeholders tend in this way to reconcile Kanak social practices with the demands of western market logic. From the Kanak viewpoint, they adopt this stance – leading them notably to intentionally detach themselves from the western lifestyle to preserve their customs and traditions, whilst integrating certain principles that govern the market economy – with a view to gaining recognition and taking advantage of it (Bouard & Sourisseau 2010). The purpose of this double stance is notably to obtain greater negotiating power and to have greater autonomy in the choices proposed to them. These recompositions, or their absence, reflect the boundaries that are increasingly economically and socially mobile and porous. They challenge the dichotomous base that we have highlighted in the implementation of public policies.

Conclusion – Integration/ Segregation: towards a key enabling a fresh read on development policies

Even though the integration and segregation theoretical tool is interesting for understanding the role of public action in the transformations of Caledonian rural life, the reality goes beyond the integrationist and segregationist representations we afford it. The case of New Caledonia and the illustrations proposed lead us beyond the usual dichotomous model presented earlier, call for a broader redefinition of the integration and segregation concepts, and validate our three hypotheses.

But before returning to our hypotheses, it is worth pointing out that colonial New Caledonia illustrates, no doubt in the extreme, other frequent situations of "negative" segregation within the colonial space or in situations where democratic functioning is extremely weak. Granted, a closer look at interpersonal relations is enough to nuance the totally segregated nature of the society prior to the political agreements (Trépied 2011). But above all, such instituted forms of segregation, considered as an integral part of a development model, imply unbearable human and social costs, which end up making them inoperable.

The "post-political agreements" New Caledonia then bears an image of integration, mediatized in a "positive" version, it too being archetypal. In particular, the common destiny sets an ideological course towards the integration of values and identities. However, the reality is different and reveals the persistence

of segregations, rooted in a determinism of colonial power struggles. The break from this reality is that these segregations also have a compensatory and, ultimately, an integrating dimension. There is indeed segregation in that spaces. Stakeholders and policies are clearly and intentionally differentiated and are defined in their opposition. There is also segregation because categories of stakeholders are effectively assigned specific public policies and spaces. But there is integration as well: some categories of the population, heretofore excluded from development policies, are now the targets for public policies. There is integration because the societies are building bridges between spaces and economic players, who are breaking away from the claimed duality and declared specialization of spaces. There is integration, too, because the freedom given to the invention and adaptation of instruments multiplies the possible combinations and representations of development and its standards. This demonstrates the merits of perceiving integration and segregation as the facets of a prism. Restricting the interpretation of provincial public action to the introduction of systems fostering the integration of the Kanak populations in commercial agriculture would be an error.

In addition, whatever the observation scale opted for, placing the agricultural development policies in New Caledonia since colonization in historical perspective, shows the alternance between phases of integration and "compensatory segregation" policies, and the trajectories and differentiated practices of individuals faced with the political bifurcation mediatized as integrative, validates our second hypothesis. The dissemination of an agricultural model resolutely geared towards commercial insertion is not a linear process. Development trajectories result from actions and reactions, subjected to market forces, but also to the social and identity forces of the community to which one belongs. These combined forces can lead to different trajectories making it necessary to relativize the expected impacts of setting in place public policy instruments.

There are of course limitations of comparison segregating publics and territories to more effectively assist them, and integrating populations, spaces and resources that had previously been marginalized or forgotten. But in post-colonial contexts, such as South Africa, Australia, Brazil – in line with our third hypothesis – the question of boundaries that is raised in the proactive accompaniment of development, is very frequent. Development challenges focus on how to segregate and integrate and therefore how to define which player, which resource and which space should be covered by a given public policy instrument.

The Caledonian case emphasizes the difficulty of these definitions, linked to the porosity and plasticity of the boundaries (Caron 2011). The latter are only temporary representations likely to evolve with the social dynamics at work. Neither are they merely lines embodying a separation. They may be strategic zones where innovations take form. For instance, in New Caledonia, GDPLs are areas of intersection between customary representations of retrenchment and openings towards anonymization and towards commercial insertion. Likewise, the local committees of the development programmes are forums for the production of organizational and institutional innovations. These examples would be worth generalizing; the integration/segregation pair, as a theoretical tool of understanding, may help shed light on a third agrarian frontier (Hubert and Billaud 2008).

Lastly, use of the I/S pair relativizes the reality of the major agricultural development models, to the benefit of a clearer understanding of ideologies and practices. Whilst not providing the means to improve public development policies, this theoretical tool can be used to pinpoint the complexities of the processes at work and the possibility of a virtuous cohabitation of orientations that are often presented as antinomic. On the other hand, in a comparative perspective between New Caledonia, South Africa and Brazil, might the I/S theoretical tool make it possible to investigate the different ways compensatory public action is politicized in the rural world?

Hint

This article was previously published in French language in the journal "Natures, Sciences, Sociétés". Reference: Bouard, S., J.-M. Sourisseau and B. Zenou (2014). Intégration / ségrégation: une clé de lecture des recompositions des modèles de développement? Le cas de la Nouvelle-Calédonie. *Natures, Sciences, Sociétés*, vol. 22(4): 305-316. DOI 10.1051/nss/2014044. For this publication, the article was translated into English, and then substantially modified, shortened and updated.

Endnotes

[1] Budget rebalancing was written into the referendum law of 8 November 1988. That law stipulates the following distribution of investment allocations: ¾ for NP and IP, ¼ for SP. Likewise, the working capital of the Territory budget was divided into 2/5 for NP, 2/5 for IP and 1/5 for the Territory. This distribution had no precedent in the history of State allocations to a local authority for land-use planning. It is still in force, despite recurrent complaints from South province.

[2] We can consider that positive segregation is a division (of social or cultural categories, of space, of territory) with the ultimate aim of achieving integrationist objectives more rapidly.

[3] According to ITSEE, market output fell from 4 to 1.5 billion between 1965 and 1981.

[4] Benefiting from the redistribution of lands, some Kanaks geared their production towards the markets and grouped together.

[5] 9 million Euros, or 15% of this gross output, came from the marketing of agricultural products.

[6] Most of the land GDPLs were formed from the start of the 1990s with a view to benefiting from land attributions by the State land and rural development agency (ADRAF), under the customary law regime.

[7] Société Minière du Sud Pacifique, a mining company in North province, through its holding, Sofinor, is the main shareholder. SMSP is the emblematic company of a Kanak public capitalism that is likely to offer an economic model that is viable in independence.

[8] These companies are the outcome of the grouping of 3 tribes (Wasse, Tenda and Mission) who founded these two companies.

References

ADRAF (2019). Carte des statuts foncier. Retrieved from: http://www.adraf.nc [Accessed on 25th August 2020]

Bouard, S. (2013). La ruralité kanak à la recherche d'un modèle décolonisé, Papeete, Tahiti, Au vent des Îles.

Bouard, S., Apithy, L. and Guyard, S. (2018). Family farming in contemporary Kanak society, In: Bosc, P.-M., Sourisseau, J.-M., Bonnal, P., Gasselin, P., Valette, E. and Bélières, J.-F. (eds.), Diversity of Family Farming Around the World, Existence, Transformations and Possible Futures of Family Farms, Quae Springer International Publishing, pp. 285-296. DOI: 10.1007/978-3-319-77535-7.

Bouard, S., Apithy, L., Guyard, S. and Sourisseau, J-M. (forthcoming). "Fortunately, I have my field": changes and permanencies in Kanak family farming. In: Kowasch M. & Batterbury, S.P.J. (eds.). Geography of New Caledonia/Kanaky, World Regional Geography Book Series, Heidelberg: Springer Nature.

Bouard, S., & Sourisseau, J.-M. (2010). Stratégies des ménages kanak: hybridations entre logiques marchandes et non marchandes, Natures Sciences Sociétés, (18), 266-275. DOI: https://doi.org/10.1051/nss/2010033

Caron, P. (2011). Ré-concilier agricultures et sociétés: dévoiler le territoire et repenser les limites. Mémoire de recherche pour l'Habilitation à Diriger des Recherches. Université Paris Ouest de Nanterre.

Caron, P. and Le Cotty, T. (2006). A review of the different concepts of multifunctionality and their evolution. European Series on Multifunctionality, 10 March 2006.

Elias, N. (1997) Logiques d'exclusion. Fayard, Paris.

Forrest, M., & Kowasch, M. (2016). New Caledonia and/or Kanaky: On the way to political independence. Pacific Geographies. 2016/1 (46), 4-10. DOI: 10.23791/460410

Gautier, D., Ankogui-Mpoko, G.F., Réounodji, F., Njoya, A. and Seignobos, C. (2005). Agriculteurs et éleveurs des savanes d'Afrique central : de la coexistence à l'intégration territoriale. L'Espace géographique. 2005/3 (34), 223-236. DOI: https://doi.org/10.3917/eg.343.0223

Gibson-Graham, J.K. (2010). Forging development partnerships. Possibilities for local and regional development. In Pike, A., Rodriguez-Pose, A., Tomaney, J., (eds.) Handbook of Local and Regional Development, London, Routledge, pp. 226-236.

Guyard, S., Apithy, A., Bouard, S. and Sourisseau, J.-M. (2013). Revenus des familles résidant en tribu en Nouvelle-Calédonie: la ressource non monétaire en question, Revue Juridique, Politique, Économique et Sociale de Nouvelle-Calédonie. (21), 100-110.

Hazell, P., Poulton, C., Wiggins, S., & Dorward, A. (2007). The Future of small farms for poverty reduction and growth. International Food Policy Research Institute (IFPRI) 2020 Discussion Paper 42, May 2007, Washington D.C.: IFPRI.

Hobbs, N.T., Galvin, K. A. and Stokes, C. J. (2008). Fragmentation of rangelands: implications for humans, animals, and landscapes, Global Environmental Change. (18), 776-785. DOI: https://doi.org/10.1016/j.gloenvcha.2008.07.011

Hubert, B. (2010). L'agronomie, science de l'agriculture? Le Mouvement Social. 2010/4 (233), 143-157. DOI: https://doi.org/10.3917/lms.233.0143

Hubert, B. and Caron, P. (2009). Imaginer l'avenir pour agir aujourd'hui, en alliant prospective et recherche: l'exemple de la prospective Agrimonde. Natures Sciences Sociétés. 2009/4 (17), 417-423. Retrieved from: https://www.cairn.info/revue-natures-sciences-societes-2009-4-page-417.htm.

Hubert, B. & Billaud, J-P. (2008). Pour ne plus voir d'émeutes de la faim: une troisième frontière agraire à explorer ? Natures Sciences Sociétés. 2008/2 (16), 109-110. Retrieved from: https://www.cairn.info/revue-natures-sciences-societes-2008-2-page-109.htm.

Elias, N. & Scotson, J.-L. (1997). Logiques d'exclusion, Paris, Fayard.

Freyss, J. (1995). Économie assistée et changement social en Nouvelle-Calédonie, Paris, Presses universitaires de France.

IAASTD (2009). Agriculture at a crossroads. Synthesis rapport. International Assessment of Agricultural Knowledge. Science and Technology for Development. Island Press. London.

Kohler, J.-M. (1991). Identité canaque et intégration coloniale. Journal de la Société des océanistes. 1991-1-2 (92-93), 47-51. DOI: https://doi.org/10.3406/jso.1991.2895.

Le Meur, P.-Y. (2012). Politique et réforme foncière en Nouvelle-Calédonie: entre rééquilibrages et reconnaissance. In: Faberon, J.Y. and Mennesson, T. (eds.) Peuple premier et cohésion sociale en Nouvelle-Calédonie: identités et rééquilibrages. Aix-en-Provence: Presses Universitaires d'Aix-Marseille, pp. 91-113

Léonard, E. (2005). Frontière interne, gouvernance locale et production de la culture politique en milieu rural mexicain. La réforme agraire dans le Sud-de Veracruz, 1920-2000. Cahiers des Amériques Latines. (45), 51-74. DOI: https://doi.org/10.4000/cal.7517.

Losch, B., Fréguin-Gresh, S. and White, E. (2011). Rural Transformations and Late Developing Countries in a Globalizing World. World Bank report, Washington DC.

Mapou, L. (1999). De 1978 aux Accords de Matignon, dix années de réforme foncière en Nouvelle Calédonie. In David G., Guillaud D. and Pillon P. (eds). La Nouvelle-Calédonie à la croisée des chemins 1989-1997. Paris, Société des Océanistes, pp. 137-156.

Merle, I. (1995). Expériences coloniales : la Nouvelle-Calédonie. 1853-1920. Belin, Paris.

Merle, I., & Muckle, A. (2019). L'indigénat. Génèse dans l'Empire français. Pratiques en Nouvelle-Calédonie. CNRS Éditions, Paris.

Morin, E. (1966). Adolescents en transition: classe adolescente et classes sociales, aspiration au divertissement et aspiration à la vie bourgeoise dans une commune du Sud-Finistère. Revue Française de Sociologie. 7 (4), 435-455. DOI: 10.2307/3319696.

Moustier, P., & Anh, T.D. (2010) Promouvoir l'information et la coopération, Cirad, Montpellier, Perspective (Policy Brief), 5, 06/2010.

Pillon, P. (1990). D'un mode de produire à l'autre: un siècle d'élevage bovin mélanésien en Nouvelle-Calédonie. In: De Deckker, P. and Toullelan, P.Y. (eds). La France et le Pacifique. Paris, Société Française d'histoire des outre-mers, pp. 243-261.

Poithily, D. (2010). Les stratégies et motivations des entrepreneurs de VKP. Mémoire de master Aménagement Développement et Territorial, IAC, Université de la Nouvelle-Calédonie, Nouméa.

Saussol, A. (1979). L'héritage. Essai sur le problème foncier mélanésien en Nouvelle-Calédonie, Société des océanistes, Musée de l'Homme, Paris.

Sencébé, Y. (2009). Une lecture des inégalités et des différenciations de développement local à travers quatre figures de territoires. Espace populations sociétés. Retrieved from: http://eps.revues.org/index3550.htm [Accessed on May 28, 2012].

Sourisseau, J.-M., Grochain S. and Poithily D. (2017). From anticipation to practice: Social and economic management of a nickel plant's establishment in New Caledonia's north province. In: Filer, C. and Le Meur P.-Y. (eds). Large-scale Mines and Local-level Politics. Canberra: Australian National University, pp. 61-97.

Sourisseau, J.M., Pestaña, G., Géronimi, V. and Schembri, P. (2010a). Politiques publiques et développement durable dans le monde rural calédonien. Économie Rurale, (320) 9-23. DOI: https://doi.org/10.4000/economierurale.2857

Sourisseau, J.M., Pestaña, G., Gaillard, C., Bouard, S. and Mennesson, T. (2010b). À la recherche des politiques rurales en Nouvelle-Calédonie. Trajectoires des institutions et représentations locales des enjeux de développement (1853-2004), IAC Éditions, Études et Synthèses, Tabù Éditions, Nouméa.

Sourisseau, J.M., Tyuienon, R., Gambey, J.C., Djama, M. and Mercoiret, M.R. (2006). Les sociétés locales face aux défis du développement économique. Province Nord de Nouvelle-Calédonie. Pouembout, IAC/DDEE-PN/Cirad.

Timmer, P.C. (2009). A world without agriculture. The structural transformation in historical perspective. AEI press, Washington DC.

Trépied, B. (2010). Une mairie dans la France coloniale. Koné, Nouvelle-Calédonie, Karthala, Paris.

United Nations (2000). Millennium Development Goals, United Nations, New-York.

van der Ploeg, J. D. (2000). Revitalizing agriculture: Farming economically as starting ground for rural development. Sociologia Ruralis. 40 (4), 497-511. DOI: 10.1111/1467-9523.00163.

Vieillard-Baron, H. & P. De Almeida Vasconcelos (2004). Une lecture de la ségrégation au Brésil au regard de la situation française. Diversité. (139), 171-178.

Vieillard-Baron, H. (2006). Des banlieues françaises aux périphéries américaines : du mythe à l'impossible confrontation ? Hérodote 2006/3 (122), 10-24. DOI: 10.3917/her.122.0010.

World Bank (2007). World Development Report 2008 – Agriculture for Development. World Bank, Washington DC.

Zidouri, F. (2008). Gouvernance sociale et inclusion sociale à partir du projet d'autonomie régionale du Sahara. In Le projet marocain d'autonomie de la région du Sahara: garantie et viabilité. Centre d'Etudes Internationales, May 2008, pp. 202-208.

Corresponding Author: Séverine Bouard [bouard@iac.nc] is a geographer specialist of Melanesian rural livelihoods, development studies, governance in rural development policies. Since 2005, her research has addressed issues related to the kanak livelihoods and evolution of development policies.

Her recent research activities mainly focus on building methodologies and analysis on Kanak indigenous livelihoods. Furthermore, she works on sustainable development, mining activities and natural resource management in New Caledonia.

Vanuatu's 40th anniversary: Review of the first decade of political independence from 1980 to 1990

Gilbert David[1]

[1] Institute of Research for Development (IRD), UMR Espace-DEV, Maison de la télédétection, 500 rue JF Breton - 34093 Montpellier cedex 5, France, Email: gilbert.david@ird.fr.

DOI: 10.23791/541524

Abstract: The year 2020 is a particularly important one for Vanuatu. On 30 July, this SID (Small Island developing state) celebrated the 40th anniversary of its independence. And in December 2020 is should be leaving the list of the least developed countries in the world. We could say that at 40 years old, Vanuatu has reached adulthood, but its first ten years of life were critical for its development. Vanuatu's first two development plans set up the foundations for economic and social viability in the face of constraints imposed by insularity. Forty years after independence, many elements of these development plans are still present in national policy. The objective of this article is to look back at the first decade of independence in terms of Vanuatu's development policies, the rationale behind them, the hopes they raised and the constraints they encountered. Receptive to the concepts of the "Pacific Way" and "Melanesian renaissance", the first government of Vanuatu decided to build an endogenous development model. But to implement it, it chose economic planning, exogenous to the region. Despite undeniable successes, this model of endogenous development came up against constraints imposed by insularity and the international economic context.

Keywords: Vanuatu, independence, Pacific Way, SIDS (Small Island Developing State), development plans, insularity

[Submitted as Scientific Paper: 15 Juli 2020, acceptance of the revised manuscript: 29 September 2020]

Figure 1: Impression from celebration of Vanuatu's Independence Day in 2019

Source: Kowasch 2019

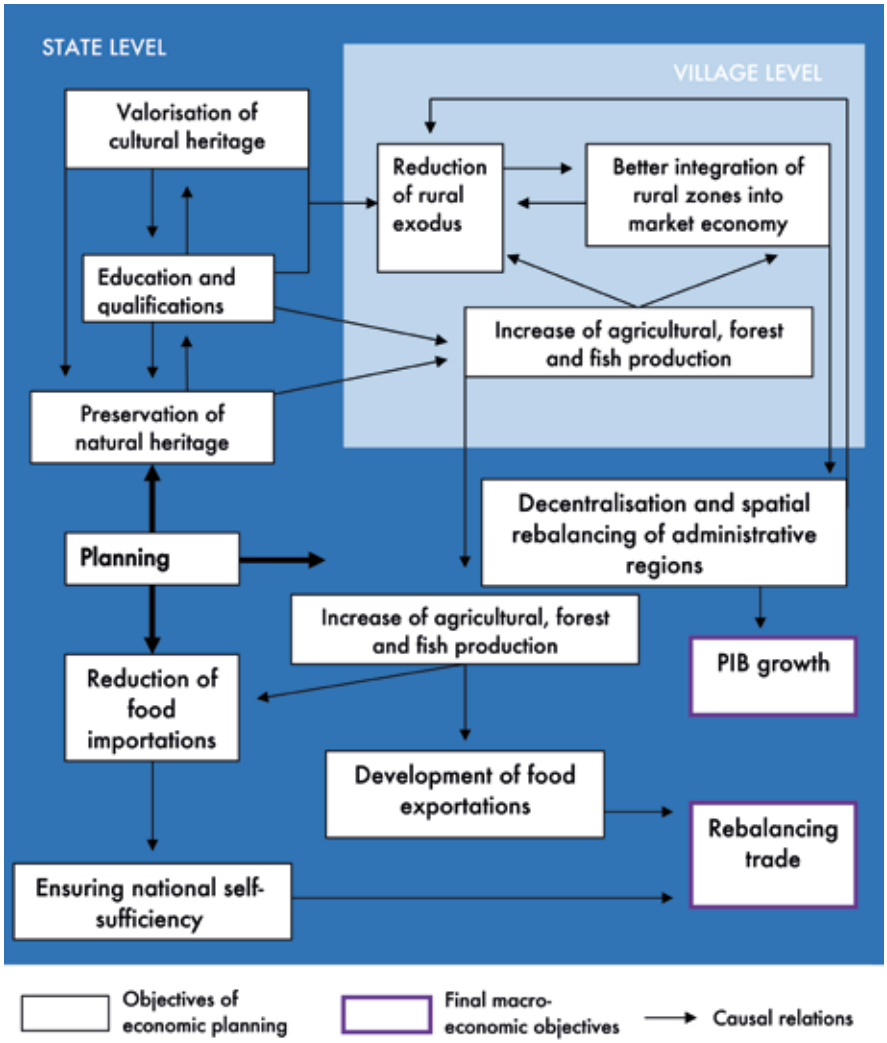
Introduction

The year 2020 is particularly important for Melanesia. On 4 October, the second referendum for political independence of New Caledonia was held, and on 30 July, Vanuatu celebrated the 40th "anniversary" of its independence from France and Great Britain (Fig 1 shows the celebration of independence in 2019, the 39th "anniversary"). This young Oceanian State divides voters in New Caledonia, where those loyal to the French Republic see Vanuatu's independence as unsuccessful, leading the former New Hebrides towards failed development and misery. The proof, for them, is that Vanuatu is among the 47 least developed countries (LDCs) on the planet. The supporters of Kanaky, an independent New Caledonia, answer that on 20 December 2020 Vanuatu will leave the list of LDCs[1], proof of the improvement of its economic situation as an independent nation. They also remind us that in 2016, it was ranked 4th happiest country in the world by the NEF (New Economics Foundation), a British independent research institute, that developed the Happy Planet Index (HPI), and was ranked first in this index in 2006.[2]

Vanuatu's 40th anniversary marks the maturity of a State. This middle age is characterized by the emergence of new requirements, for example the desire to create a national university. The first decades of independence were devoted to ensure the country's viability. When the question of higher education arose, these functions were fulfilled by the University of the South Pacific (USP), a regional university founded in 1968 (McCall 1984; Naidu 2019). After 30 to 40 years of independence, it seems logical to establish its own national university. Vanuatu follows the example of three other Small Islands Developing States (SIDS) in the South Pacific in having a national university: Fiji, the Solomon Islands and Samoa. As Vanuatu rejoices and celebrate its middle age, it is important to look back on the goals that the new country established at the outset of independence, and to see if, and how, they have been achieved. This article scrutinizes those early development policies, revisits the rationale behind them, the hopes they raised, and the constraints they encountered.

This study is based on two vectors of knowledge. The first is an analysis of public policy documents published by the government of Vanuatu during the first ten years of independence. The second is participant observation. I lived in Vanuatu for a total of five years, working on two contracts (1984-85 and 1989-91). Based at the Fisheries Department in Port Vila, I studied the development of Vanuatu's fisheries and the integration of the sector into public development policies (Cillaurren et al. 2001; David 2011). I also taught geography for three and a half years at the Port Vila branch of the USP (see David 1989).

The paper is structured in two parts. The first part is devoted to economic planning. Rebalancing the national territory and developing human capital were two early development priorities for the independent government. The second part provides an analysis of the first two development plans. Emphasis is put first on economic performance, including Gross Domestic Product (GDP) and the trade balance, and second, on geographical indicators, including schooling levels and internal migration.



Source: Vanuatu NPO 1982 and 1990.

Figure 2: The objectives of Vanuatu's first two development plans.

Economic planning as a "driver" of Vanuatu viability

The viability of small island states was the subject of in-depth studies initiated by UNCTAD in the early 1980s (David 2010). Viability was defined as the combination of a static state, "the meeting of the necessary and sufficient conditions to exist and endure", and a dynamic state, "the conditions to … achieve development both in terms of sustainable use of natural resources and in terms of improvement of the social and economic standard of living of the population" (Doumenge 1983, 1985).

On the eve of independence in 1980, the economy of the New Hebrides condominium had serious structural weaknesses, which were a powerful constraint for the viability of the future State of Vanuatu. Half of the cultivated land was committed to subsistence agriculture. Coconuts and copra production, the main, if not the only source of cash income for rural households, were in decline. The majority of coconut trees were over 50 years old (Weightman 1989).

Source: Kowasch 2019.

Figure 3: Customary wedding ceremony in Port-Vila.

In addition, consumption of imported food was rapidly increasing in rural areas, causing further deterioration in the trade balance. Four staple foods - rice, canned fish, flour processed into bread, and sugar - alone accounted for 42% of total household expenditures and 62% of expenditure on food (Marshall 1986). These structural weaknesses in Vanuatu's economy were compounded by a major political crisis. Secession attempts arose on Santo, Tanna and Lamap (South of Malakula), three of the country's main islands (Bonnemaison 1985, 1986, 1987; Huffer 1993), with the result that exports fell by 30% between 1979 and 1989, and GDP declined from US$ 80 million to US$ 64 million.

Faced with the need to build a new economic base and to strengthen national unity, the new Government of Vanuatu opted for an original set of hopeful policies. Rejecting the liberal model, but without adhering to Marxist economic management as used in the Eastern Bloc, this policy relied on Oceanian cultural values and aimed to distance itself from the global East-West polarization. Under the government of Walter Lini[3], Prime Minister from 1980 to September 1991, a model of self-centered development was set up, referring to "Melanesian socialism", an ideology developed by the Vanuaaku Pati (VAP) and based on Christian principles and the values of Oceanian culture (Tabani 2000).

For Lini, the viability of the young State of Vanuatu meant self-reliance. Viability is primarily an economic concept but self-reliance includes economic and political components. In 1983, Lini decided first to officially join the non-aligned movement, and second to establish diplomatic relations with Cuba. In 1986, while the Cold War was still going on, Vanuatu was the only country in Oceania not to align with the USA and the majority of Western nations. The Lini government established diplomatic relations with the Soviet Union (in July 1986) and also with the United States (in September 1986) (Huffer 1993). The desire for non-alignment and anti-colonialism appeared very early in Lini's reflections on the future of Vanuatu. It led him to consider economic planning, devoid of particular ideological directions, as a major tool to achieve Vanuatu's self-reliance. Looking back, Vanuatu is the country in Oceania that has most favoured state-led economic development. This was at variance with many of the newly independent African countries, with the exception of Tanzania and Guinea, that had followed European economic planning models or were strongly influenced by their former colonial powers.

From the early days of the Republic, a National Planning Office (NPO) was created within the Prime Minister's Office to design the overall plan for self-reliance and to guide the sectoral policies of each ministry. As Vanuatu did not have experts in these fields, the vast majority of the NPSO staff were foreign consultants, mainly from Western English-speaking countries, including Australia. Launched in 1982 for a period of 15 years, economic planning was designed to lead the country to economic self-reliance. The other two facets of Vanuatu's self-centred development model were first the priority given to the development of agriculture and natural resource exploitation, and second, the concern to make the village the reference place for economic development (Fig. 2). The importance given to the village is consistent with the significance given to custom (Fig. 3) and customary chiefs defined by a "Melanesian Renaissance". It is also in line with the model of African socialism developed by Julius Nyerere in Tanzania, particularly his policy of organizing village communities (the "ujamaas") along collectivist principles. This inspired Lini to design Vanuatu's policy of self-reliance.

Vanuatu's broad public policy guidelines were defined during the first development plan (1982-1986). This remained unchanged until 1991, the end of the second development plan and the "reign" of Walter Lini. In December 1991, the Union of Moderate Parties, the main opposition party since the country gained independence, won the parliamentary elections. In the absence of industry and mining, the guidelines

Source: Gilbert David 2007.

Figure 4: Development of domestic trade and transport by sea, here between Efate and Malakula.

promoted agriculture, forestry and fisheries, the first two sectors accounting for 40% of development investments in the first Plan. Efforts focused on the development of micro-projects at the village level with four objectives: (a) to ensure the country's food self-reliance; (b) to better integrate rural areas into the market economy; (c) to reduce the rural exodus to Port-Vila (on Efate island) and Luganville (on Santo island), the country's two urban centres; and (d) to diversify copra-dominated exports.

Development policy for the primary sector was accompanied by a strong desire to restructure the territorial administrative framework, which was inherited from the New Hebrides condominium. This administrative restructuring was supplemented by a will to spatially rebalance the archipelago, but not without ulterior political motives. The three secessionist islands of Santo, Tanna and Malakula were the agricultural lungs of the New Hebrides (fig. 4). For the young State of Vanuatu, it was vital to promote other poles of development that could stabilize the population and avoid rural-urban migration. At the macroeconomic level, the primary sector development policy was intended to provide an improvement of the trade balance, both by increasing exports and by better supplying the local market to improve import substitution.

Restructuring of the territorial administrative framework and regional rebalancing

Under the British-French condominium, four administrative districts divided the New Hebrides into parallel bands along latitudes: North, North-Central, South-Central and South, the latter also known as Tafea. With political independence in 1980, eleven regions were created.[4] Known as "Local Government Regions" (L.G.R.), they were administered by a Local Government Council, with 10 to 30 members depending on the size of the population, supported by a small administration. This council was composed of two thirds of members elected by universal suffrage every four years, with one seat per 1,500 inhabitants, and one third of the members appointed by the central government: representatives of customary chiefs, women, youth and the churches. It had three main tasks: (a) the preparation and implementation of regional development plans; (b) the construction and maintenance of educational, health, transport and cultural infrastructure such as schools, health centres, roads, bridges, secondary airports, and cultural or community centres; (c) the control of commercial activities and the levying of local taxes, including an annual capitation tax of 500 to 1,600 vatus depending on the region (the equivalent of US$5 to US$16.

The administrative decentralization was accompanied by a programme of spatial rebalancing. In 1979, the internal migration from rural areas to Port-Vila or Luganville was already a matter of concern for public authorities. Between 1967 and 1979, Vanuatu's urban population doubled from 7,770 to 15,780 (Vanuatu O.S. 1983). On the eve of independence, one third of the population was concentrated on Efate and Santo islands. For the rest of the archipelago, the migratory balance was negative. The rural-urban migration was particularly strong in Paama and the Shepherds Islands. The majority of migrants were young adults seeking employment. In the cities, they were reunited with relatives or friends who had previously settled (Bonnemaison 1977). Family and ethnic affinities played an important role in the settlement of urban neighbourhoods. Problems of employment, social housing, education, health, water supply and pollution were the corollaries of urban growth (fig. 5).

For the new Prime Minister, Walter Lini, rural-urban migration was one of the main threats to Vanuatu's future. Combined with the deterioration of their standard of living, the new migrants who had chosen to settle in Port Vila and Luganville faced acculturation problems and loss of their roots. In order to absorb migration, Lini and his team reasoned that

Source: Gilbert David 2007.

Figure 5: Urbanisation process in coastal Pango (Efate island) in 2007.

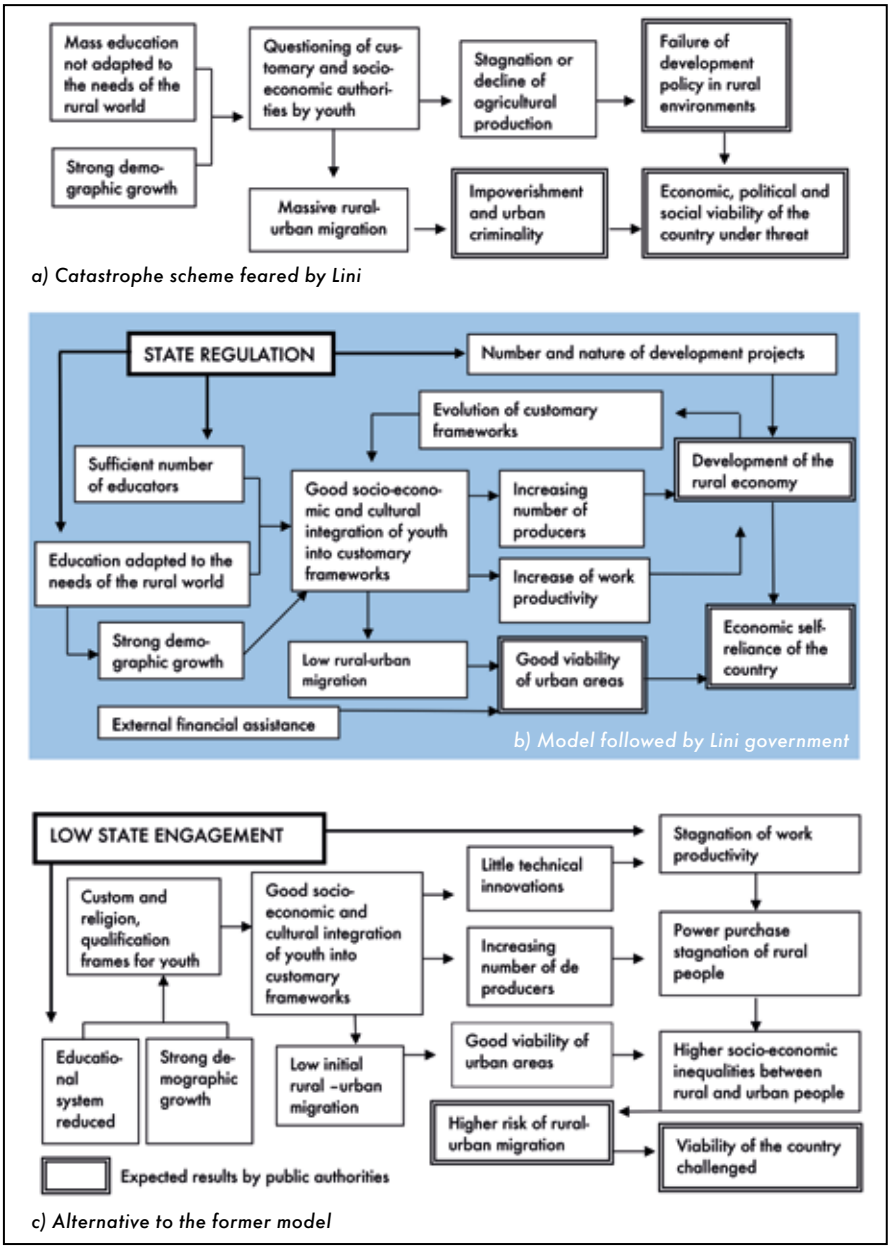
more jobs had to be created in rural areas. The spatial rebalancing programme was a response to that need. It aimed first of all to create regional development poles from the eleven provincial capitals newly-established in the framework of administrative decentralization, along with specialization of regional economies.

However, because of the limited diversity of economic resources on the different islands, due to the small size of the country, such specialization was difficult to implement. The development of coconut groves, cocoa and artisanal fishing was on the agenda everywhere, and none of the peripheral regions had specific characteristics. The four largest regions of the country (Santo/Malo, Malakula, Efate and Tafea) were the most specialized, as they had space for livestock and logging, and water for rice cultivation. The island of Tanna also had a virtual monopoly on the production of coffee (Arabica) for export, while Efate and Santo/Malo developed market gardening and local poultry and pig farming. As for industrial projects, they were mainly focused on the exploitation of natural resources, particularly timber. They could not be set up outside Efate and Luganville because of remoteness and the lack of local workforce training elsewhere. Moreover, any industrial development plans that promoted import substitution were confronted with the very limited size of the national market.[5] With the exception of the brewery in Port-Vila, the industries created in the urban centres thus remained small. The second priority of the spatial rebalancing programme was therefore the strengthening of communication and road, sea and air transport infrastructures within and between the islands (Vanuatu NPO 1982; Vanuatu NPSO 1984). The creation of Air Vanuatu in 1981 supported this imperative.

Development of the country's human capital and emergence of local entrepreneurs

During the last years of the condominium, significant efforts had been made in primary and secondary education throughout the country. The Lini government has inherited higher education levels than the average of other States in Oceania at the moment of their accession to political independence. Nevertheless, school enrolment was poor. In 1979, nearly one person out of nine in the working population was illiterate and only one third of children aged between 10-14 attended school regularly. Five out of six students dropped out of school at the end of primary school. For the new Prime Minister, all children aged 6 to 11 were now required to attend primary school, with the ultimate goal of having a quarter of them moving onto secondary school. The number of primary schools would increase by 20%. These quantitative educational targets were linked to qualitative goals. There was no point in opening new classes and increasing the number of students if the content of the curricula, developed by the former colonial powers, was not radically overhauled. It was no longer a question of bringing children the "enlightenment" of British or French education, but of preparing them to take charge of their country. The aim was to train citizens who could use their school knowledge for the development of rural communities. Young people, falling between formal knowledge gained in local schools and the daily demands of rural life, should be less inclined to migrate to the city (Fig. 6).

As a "lever of development", education was proposed as a brake of rural-urban migration, not an accelerator. In this context, Lini wanted to see the emergence of local entrepreneurs capable of taking over the plantations and businesses abandoned by expatriates on the eve of independence. The final aim was to revitalize and animate economic activities at the village level. But no specific efforts were made outside schools and education. The identification and training of potential entrepreneurs were



Source: Own Desgin.

Figure 6: The relationship between education and development, the ideological models of the VAP

left to agricultural extension officers and fisheries departments. This ambiguity reflects the contradictions of the Prime Minister's approach to education, which are indicative to his ideological perspective on urban-rural and population-development relationships.

On the one hand, education was seen as a priority for a country where half the population was under 16 years old and where the intention was to build economic independence. On the other hand, the government highlighted the ambiguous effects of education in terms of rural-urban migration, unemployment and crime as evidenced by this excerpt from the mid-term review of Vanuatu's first National Development Plan: "As many countries have discovered, too rapid, an expansion of a formal educational system, with the foreign curriculum, techniques, and built in values that it brings with it, can be overdone and lead to the phenomenon of "educated unemployed". The "educated" soon push the less educated out of work, and the desperate circle of unemployment and crime begins. Once this cycle starts, there is virtually no means of reversing it. Few people, after tasting the pleasures and freedoms of city life wish to return to the village (Vanuatu NPSO 1984:72). Lini perceived the urban environment as hostile, foreign to customs and to traditional ways of life, and shaped by the values of the former colonial powers. There were potential dangers for newly arrived migrants from rural areas. Christian references and pan-Pacific nationalism combined to equate rural Oceania with heaven on earth, and hell with the "city of the whites". Therefore, education and development programmes were the two main tools of the government to ensure the sustainability of rural areas and to delay urban growth.

Fig. 6 shows three models dealing with the effects on development in Vanuatu related to three different types of education policies. These models were created from the analysis and interpretation of various planning documents produced by the Prime Minister's Office during the launch of the first national development plan (Vanuatu NPO 1982) and during the mid-term evaluation of this plan (Vanuatu NPSO 1984). These 'ideal types' illustrate the possible effects of high population growth. Despite an average increase of 3.2% between 1967 and 1979, the VAP did not actually consider population growth to be a problem. On the contrary, demographic dynamism was seen as Vanuatu's "revenge" on its colonial history, and a prerequisite for rebuilding the nation's economic viability. The reality was somewhat different.

Fig. 6a shows the catastrophic outcomes feared by Lini. In this model, budget spending on education is high, resulting in mass education. All schools and colleges built by the colonial administration remain, and new schools open. The literacy rate increases significantly despite high population growth. Quantitatively, the challenges of population growth are addressed. But the programmes taught to rural students, who made up more than 95% of Vanuatu's youth at independence, were not adapted to the needs of village economies and island self-reliance. Educational programmes are colonial, based on the curriculum of the French and British regimes. These did not lead to increase agricultural production expected by the development plan. Feeling useless in their village, young graduates perceived urban migration as their best solution. As a result of increased migration, urban population growth quickly outstripped job opportunities. The imbalance between the number of applicants and jobs opportunities led to impoverishment and more petty crime. In rural areas, migration to the city leads to the departure of motivated young people, which has a negative impact on development projects. Ultimately, this model leads to serious threats to the economic and social viability of the country and the failure of the concept of Melanesian renaissance.

Fig. 6b shows the model followed by

the Lini government. The State plays a central role and has a quantitative and qualitative input on education. First, content knowledge corresponds to the needs of village economy and society. Second, the number of teachers is sufficient to cover teaching needs. Third, those teachers are properly trained to adapt their instruction to the village context. This educational input results in better labour productivity and more effective implementation of development programmes. In the end, this model leads to reduced rural-urban migration and good viability of the urban areas, whose population remains limited.

Fig. 6c shows a model where the State is almost absent, due to insufficient budgetary capacity. The State is unable to maintain the dense network of primary and secondary schools inherited from the condominium. The very limited State involvement in education is partly compensated by the participation of customary systems and churches in the education of young villagers. This type of training is not compatible with the development of innovative agricultural practices. In the end, labour productivity stagnates, and purchasing power falls in village communities, generating dissatisfaction. There is a high risk of widening of social-economic disparities between urban and rural areas, promoting rural-urban migration. Young people a) no longer recognize themselves in the customary village organization and subsistence farming, where the cash economy remains underdeveloped and b) are attracted by a certain level of employment and rising wages of urban areas. In the short or medium term, such growing inequalities in employment and income between rural and urban areas may lead to more migration, followed by rapid urban growth. This leads to the same problems as detailed in Fig. 6a.

The following excerpt from the mid-term review of Vanuatu's first National Development is an interesting illustration of the questions raised by the Government of Vanuatu. "Few, if any, countries have succeeded in achieving growth in incomes without also suffering growth in unemployment and crime, as well as a general breakdown of traditional institutional structures and values. Vanuatu may be fortunate, in some ways, in that development has only started of late, leaving traditional institutions largely intact. By examining other countries experiences, Vanuatu can take steps towards minimizing the adverse social impacts of modernization and structural transformation. One option is to go slow and with caution rather than rushing ahead along an uncertain path which has failed more often than not elsewhere. In any case, the speed with which development efforts are pushed forward should always take into consideration the availability of local manpower. If such manpower is not available, efforts may proceed on two fronts; one option is to train the manpower, while the other is to phase out or delay the project until sufficient manpower is available" (Vanuatu NPSO 1984:71).

Analysis of the first two development plans: political convictions in the face of island realities

At the beginning of Vanuatu's first development plan, economic self-reliance was defined according to macro-economic criteria: "The stage of economic self-reliance will have been reached when Vanuatu is able to meet import requirements from foreign exchange earnings and fiscal requirements from domestic revenues" (Vanuatu NPO 1982:3). The chronic deficit in the State budget, low savings in relation to development needs, and a trade balance unbalanced in favour of imports were identified as the three main macro-economic constraints needed to be removed to achieve economic self-reliance. Despite the fact that these objectives were made obsolete by ideological content of Lini's discourse and thinking, a first analysis of the development plans has to refer to the macro-economic principles, to education measures and to the field of eco-demography.

Gross Domestic Product (GDP) and trade balance

Although the GDP is a poor indicator of economic activities in a country like Vanuatu, where the food sector still dominates many islands, its temporal variation is a valuable indicator of government development efforts. A better integration of rural areas into the cash economy should have resulted in an overall increase in GDP and in agricultural growth relative to other economic sectors in GDP formation, since the development of village agriculture was one of Lini's priorities.

From 1983 to 1990, Vanuatu's GDP grew by 18.5% from 10,078 million to 11,938 million vatus (at 1983 prices, equivalent to US$100-120 million). Only the industrial sector enjoyed steady growth and its share in GDP increased from 7.5 to 15%. In contrast, the respective shares of services and the primary sector in GDP showed a slightly negative trend (66-62% and 26-23%). The decline in the share of services in GDP occurred only in 1989 and 1990 and is explained by the decline of administration expenses, which fell by 15% between 1987-1988 and 1989-1990 – the first results of an "austerity cure" enacted by the country's donors. After ten years of self-governance, the Government of Vanuatu had to comply with the rules of "good governance" established at an international level and embarked on a structural adjustment programme, described below (Vanuatu BNP 1992).

This situation was an induced effect of Lini's willingness to open up the country to international donors. At first glance, this seems to be paradoxical and counter to the principles of Melanesian socialism. But it was consistent with Vanuatu's political non-alignment, which is reflected in the diversification of bilateral donors and the country's integration into international bodies (Huffer 1993). It is also consistent with Lini's desire to secure the budgets that could finance development operations in Vanuatu. This strategy was proven to be very effective. Over the periods 1980-84 and 1985-89, international aid amounted to US$612 and US$425 per capita respectively. In the period 1990-94, it was only US$350 per capita (World Bank 2005).

While donors provided significant funding to the Vanuatu economy, making this small island State one of the world's most aided countries per capita (Antheaume and Lawrence 1985; Antheaume and Bonnemaison 1988), aid had also a counterpart: Vanuatu's obligation to comply with donor recommendations, particularly in terms of structural adjustment. This dependency, or even subjugation, of Vanuatu to certain international donors clearly did run counter to the principles of Melanesian renaissance and Melanesian socialism, in particular the principle of island self-reliance. It was a very heavy cost, but VAP and Lini hoped that the benefits to be derived from this aid would be much greater and would constitute an essential contribution to the national policy implemented by the first development plan. Jarayaman and Ward (2006) rec-

ognize that exports have had a positive effect on social-economic growth. And international aid may have helped to support exports, although available data do not allow this hypothesis to be verified. Hughes and Sodhi (2006) are more severe and note that international aid did not benefit Vanuatu.

The endogenous development policy put in place by the successive Lini governments should have led to a spectacular expansion of the primary sector economy. However, this did not happen. The erosion of the sector after 1985 reflects the vulnerability of agriculture due to fluctuations in copra prices on the international market, and to the risk of hurricanes. Such vulnerability already prevailed before independence, and the government's policy of diversifying commercial agriculture hardly changed this. The agricultural sector as a whole still mirrors trends among the three main export crops (copra, cocoa, coffee). Food crops remained the main alternative to copra production (Fig. 7). Their share in the value added of agriculture increased from 1983 to 1990, from 36% at the beginning of the period (1983-1985) to 48% in 1988-1989, a period of very low copra production following the devastating passage of cyclone Uma in 1987 (David and Lille 1992). Except for 1989, 1990 and 1991, during which GDP growth exceeded 4%, the population always grew at a faster rate, leading to a deterioration in GDP per capita. This undermined the government's goal of economic independence, including the policy of import substitution. From 1982-1983 to 1990-1991, import substitution doubled in value, while export coverage fell from 25 to 20%, with exports growing by only 16% over the same period (Vanuatu SO 1983; Vanuatu NPSO 1986; Vanuatu BNP 1992).

Level of schooling and net migration between rural and urban areas

Education is a sector where demographic growth was neglected in the first national plan of 1981 and 1982. The mid-term review of Vanuatu's first National Development Plan drew the government's attention to the dramatic increase in student numbers. From 50,250 students in 1984, this population rose to 59,410 students in 1989 and 70,760 ten years later (Vanuatu NPSO 1984). In 1984, education already accounted for a quarter of government expenditure, at an average cost per child enrolled of US$232 per year in primary schools and US$950 in secondary schools.[6] It was almost impossible to spend more money on education. Greater expenditure on education became even more difficult following political unrest in 1988.[7] Considerable spending was then needed on law enforcement. Therefore, the budget allocated to education was reduced to 20% of total expenditure (Vanuatu NPSO 1990).

To compensate for these financial restrictions and to cope with school population growth, the government raised the number of students per class, and unified the English and French school systems. This cut costs. In 1987, 956 primary school teachers taught 22,367 students, i.e. one teacher for 23.4 students. In 1994, the ratio was one teacher per 29 students, the number of teachers having been reduced by 8% and student numbers increased by 15%. Between 1982-1991, those measures do not seem to have affected school performance unduly. The quantitative targets set by the government were met, relatively cheaply. The number of primary schools (244 in 1984) did not increase much (to 260 in 1990) while youth illiteracy rate fell considerably. By 1992, over 95% of 6-year-olds were enrolled in school (Vanuatu NPSO 1984; Vanuatu BNP 1992). These undeniable quantitative successes should not mask two key negative elements. First, the limited budget for the school system against population growth. Second, the continuing cultural gap between schooling and the rural world.

To reduce the financial budget for education, the government of Vanuatu decided to entrust the maintenance of schools to local governments as part of its policy of administrative decentralization. The idea was interesting, but the transfer of competences was done without granting the local governments adequate financial resources. Most of regional income came from capitation taxes (per-person or household taxation), but its novelty hampered tax collection. By the end of the 1980s, a large number of Local Government Regions were unable to maintain their school systems. The Minister of Education then urged the village communities to take over. Many of them refused, deeming governmental actions to be inadequate in relation to the amount of tax they received and the total cost of schooling.[8] They considered that education was the exclusive responsibility of public authorities, just like health, even if it meant allowing school buildings to deteriorate: broken bulbs and windows, for example, were not replaced. A generalized deterioration could be avoided thanks to the intervention of the European Union. The 4th European Development Fund provided a subvention to renovate the worst primary schools and to ensure the maintenance of others.

The ongoing cultural gap between schooling and the rural world, feared by Lini, illustrates the slow pace of "modernization". It also seems that combining the "way blong skul" (the way of school and religion) and the "way blong custom" (the way of custom) was an utopian project, seeking to rely on the former without altering the latter. Once they had returned to their villages, most of the students who had completed "classical" secondary education could not or did not want to use their school knowledge. Many of them, refusing agricultural work, after a period of a few months to several years of idleness, decided to try "their luck" in the city. This was also a strategy chosen by many technical education graduates faced with the low purchasing power of their rural fellow citizens. The prospect of being paid in food seemed to be neither stimulating nor economically viable for young entrepreneurs selling spare parts and tools they had bought in Port-Vila or Luganville.

Poor adaptation of schooling and strong demographic growth have only encouraged migration to the country's two urban centres. The failure of the Lini government's policies are evident. The urban population actually grew by almost 74% between 1979 and 1989[9] and, with the exception of Santo-Malo, Efate and Epi, all areas of Vanuatu had negative net migration (Vanuatu SO 1991). Paama and the Shepherd Islands had the highest outmigration. Over ten years, they lost 23.8% and 10.5% of their population respectively. These migrants, mostly young adults looking for work, accounted for 32% of the new urban dwellers in Port-Vila and Luganville, with Tafea natives making up a quarter.[10] Apparently, the development programmes implemented by the government have thus proved unable to stop the rural exodus. There has been at most a slight decline in the rate of urban population growth from 7.9% per annum between 1967-1979 to 7.5% between 1979-1989 (Vanuatu OS 1983; Vanuatu SO 1991).

Source: Kowasch 2019.

Figure 7: Selling of yams at the food market in Port-Vila.

Conclusion

Since the first decade of political independence, Vanuatu's situation has involved the emergence of major risks, including climate change, in public policy. In 2015, one year before being ranked fourth among the world's happiest countries, Vanuatu was ranked the world's most dangerous country according to the risk index developed by the United Nations (BEH/UNU-HES, 2015). Profound changes are currently underway in Vanuatu. The future of this nation of about 308,000 inhabitants (at the end of 2020) is uncertain in a world of serious climatic change and pandemics. In a subsequent issue of Pacific Geographies, I will return to the example of Vanuatu and show the constraints that insularity and global changes are placing on this SIDS. At the 40th anniversary of Vanuatu's independence, I hope that this review on the country's first ten years of independence will provide food for thought to the younger generations striving for the future of their country.

Acknowledgement

I am deeply thankful to Simon Batterbury (University of Melbourne) for translation and proof reading of this paper, which has been submitted in French language.

Thanks also to the two reviewers and to all people in Vanuatu who contributed to this research work.

Endnotes

[1)] The list of LDCs is reviewed every three years by the 24 members of the Committee for Development Policy. This committee is a subsidiary body of the United Nations Economic and Social Council. Its members are nominated by the United Nations Secretary-General for a period of three years. Four Pacific island states are on the list of LDCs: Kiribati, Solomon, Tuvalu and Vanuatu. All share low-income and are highly vulnerable to economic and environmental shocks (Guillaumont 2010).

[2)] In 2006, the HPI was calculated using three parameters: the ecological footprint, life expectancy, and the degree of well-being of the population. In 2016, a fourth parameter was added: income inequality. It is this last criterion that allowed Vanuatu to return to the list of countries of happiness, as income inequality is very low compared to New Caledonia, Papua New Guinea or other Pacific Island countries. The HPI is an alternative indicator to GDP and the Human Development Index HDI developed by the United Nations.

[3)] Walter Lini (1942-1999) was an Anglican priest born on Pentecost Island. He can be considered as the Father of Vanuatu Independence (Tabani 2000). On 17 August 1971, he formed the New Hebridean Cultural Association which became the New Hebrides National Party NHNH at the end of the same year. In 1977, NHNH was renamed Vanuaa'ku Pati (VAP). In 1979, VAP won the pre-independence elections and Lini became the last chief minister of the New Hebrides Condominium. On 30 july 1980, the country gained independence and was named Vanuatu. Lini became its first Prime Minister and remained in the post until 1991 (Premdas and Steeves 1995; Morgan 2006).

[4)] Six of these regions consisted of a single island: Malakula, Pentecost, Ambrym, Epi, Paama, Efate. Two other regions (Ambae-Maewo and Paama-Lopevi) were formed from the combination of two islands of neighbouring areas. There were more complex constructions combining a main island and secondary islands in the same region. There were three of them: Santo-Malo (including Santo, Malo and Aore), Efate (including Efate, Emao, and the Nguna-Pele association), Taféa (including Tanna, Erromango, Aniwa, Futuna and Anatom). The latter was the only one that corresponded to a former district of the Condominium. A last region grouped together all the islands of a single archipelago into a single entity, as was the case of the Shepherds region, or associated two neighbouring archipelagos such as the Banks-Torrès region.

[5] In his study on viability criteria for island states, Doumenge (1983, 1985) considers that a minimum population of one million inhabitants is required to develop viable industries targeting the domestic market in response to imports.

[6] By way of comparison, in 1985 these average costs were US$223 and US$612 in Papua New Guinea, US$67 and US$361 in the Solomon Islands, and US$40 and US$90 in Indonesia; the share of education in government expenses in these three countries is much lower than in Vanuatu: 16% in Papua New Guinea, 17% in Solomon Islands and 9% in Indonesia (Vanuatu NPSO 1990:408).

[7] In May 1988, during a demonstration in Port-Vila, the police were overwhelmed and the Prime Minister Lini had to leave the city in a hurry for a few hours. However, better trained and much better equipped, the forces of law and order were in complete control in December of the same year when the President of the Republic, G.A. Sokomanu, attempted to deprive Lini of power in a coup.

[8] For example, school fees increased significantly and kindergarten enrolment, which was also subject to fees, became compulsory before the transition to primary school. In consequence, many rural families could no longer afford the financial burden of sending 4 to 5 children to school. This situation also led Maxime Carlot Korman, the new Prime Minister, after the departure of the VAP from the government in 1991, to decide to make education free of charge in early 1992. But a few weeks later, for budgetary reasons, he had to go back in part on this generous measure.

[9] The development of Port-Vila was more spectacular (+93.5%) than of Luganville (+34.5%) (Vanuatu SO 1991).

[10] In 1989, 12% of the inhabitants of Port Vila were from Paama, 17% from the Shepherds and 15.5% from Tafea (Vanuatu BNP 1992).

References

Antheaume, B. and Bonnemaison, J. (1988). Atlas des îles et des Etats du Pacifique sud. Montpellier: Publisud/ GIP Reclus, 126 p.

Antheaume, B. and Lawrence, R. (1985). A l'aide ou trop d'aide ? Evolutions des économies vivrières dans le Pacifique insulaire. Economies Rurales (99-100): 367-387.

BEH/UNU-HES (2015). World Risk Index 2015. Berlin, Bündnis Entwicklung Hilft/United Nations University – Institute for Environment and Human Security.

Bonnemaison, J. (1977). Système de migration et croissance urbaine à Port-Vila et Luganville. Paris : Orstom, Coll. Travaux et documents, n°60, 97 p.

Bonnemaison, J. (1985). Un certain refus de l'Etat, autopsie d'une tentative de sécession en Mélanésie. International Policial Science Review 6(2): 230-247.

Bonnemaison, J. (1986). L'arbre et la pirogue. Les fondements d'une identité : territoire, histoire et société dans l'archipel de Vanuatu (Mélanésie). Paris: Orstom, Coll. Travaux et Documents n° 201, vol. 1.

Bonnemaison, J. (1987). Tanna, les hommes lieu. Les fondements d'une identité, territoire, histoire et société dans l'archipel de Vanuatu (Mélanésie). Paris: Orstom, Coll. Travaux et Documents n° 201, vol. 2.

Cillaurren, E., David, G. and Grandperrin, R. (2001). Coastal fisheries atlas of Vanuatu, a 10-year development assessment. Paris, IRD, 256 p. (+ CD)

David. G. (1989). Introduction à la géographie humaine. Suva, The University of the South Pacific, Extension Services : Vol. 1 - La naissance de l'homme, 190 p., Vol. 2 - L'homme sur la terre, 245 p., Vol. 3 et 4 - Lectures complémentaires, 368 p.

David, G. (2010). Viabilité et vulnérabilités nouvelles des petits Etats insulaires : du réchauffement climatique au protocole de Kyoto. In Hommage à F. Doumenge, une géopolitique du Pacifique et de ses îles, au cœur d'une passion. Conflits Actuels, Revue d'Etudes politiques, n°23-24, pp. 59-81.

David, G. (2011). Le Vanuatu côté océan : La révolution bleue et les premières années de l'indépendance. Journal de la Société des Océanistes, n°133(2), pp.353-366.

David, G. & Lille, D. (1992). Télédétection satellitaire et risques cycloniques en milieu insulaire tropical. In "Pix îles" 90", Télédétection et milieux insulaires du Pacifique : approches intégrées. Nouméa, Territoire de Nouvelle-Calédonie/Orstom/Ifremer/Territoire de Polynésie Française, pp. 159-173 + 5 p. illustr : 621-625 (I)

Doumenge, F. (1983). Aspects de la viabilité des petits pays insulaires, Etude descriptive. CNUCED, Paris, 38 p.

Doumenge, F. (1985). The viability of small intertropical islands. In States, Microstates and islands. In Dommen, E. et Hein, P. (eds.) Islands. London, Croom Helm, pp. 70-118.

Guillaumont, P. (2010). Assessing the economic vulnerability of Small Islands States and least developped countries. The Journal of Development Studies, vol.46, issue 5 : 828-854.

Huffer, E. (1993). Grands hommes et petites îles : la politique extérieure de Fiji, Tonga et Vanuatu. Paris: Orstom, coll. « Etudes et thèses », 306 p.

Hughes, H. and G. Sodhi (2006). Annals of aid: Vanuatu and the United States Millennium Challenge Corporation, Canberra Centre for Independent Studies Issue Analysis n° 66.

Jayaraman, T.K., Ward, B.D. (2006). Economic growth in a vulnerable island nation : an empirical study of the Aid-Growth Nexus in Vanuatu. Asia-Pacific Development Journal, 13 (2) : 93-123.

Lini, W. (1983). Statement to the 38th Session of the United Nations General Assembly. New York: United Nations Organization.

Marshall, D. (1986). Report on the agriculture census 1983/1984, Part 1: the results. Port-Vila: National Planning and Statistics Office, Government of Vanuatu.

McCall, G. (1984). The university of the south Pacific: context, purpose and prospect. Vestes/AUR, 27 (2): 55-64.

Morgan, M. G. (2006). 'The Origins and Effects of Party Fragmentation in Vanuatu'. In R. Rich with L. Hambly & M. G. Morgan (Eds.), Political Parties in the Pacific Islands. Canberra, Pandanus Books, pp.117-142.

Naidu, V. (2019). A Commentary on the 50-Year History of the University of the South Pacific. In Firth, S. and Naidu, V. (eds.) Understanding Oceania: Celebrating the University of the South Pacific and its collaboration with The Australian National University. Canberra, ANU Press, chap. 2: 11-34.

Premdas R R., Steeves J S. (1995). Politics in Vanuatu: the 1991 Elections. Journal de la Société des océanistes, 100-101 (1-2): 221-234.

Tabani, Marc. 2000. «Walter Lini, la coutume de Vanuatu et le Socialisme Mélanésien». Journal de la Société des Océanistes 111(2): 173–195.

Vanuatu BNP (1992). Troisième plan national de développement de Vanuatu : 1992-1996. Port-Vila: République de Vanuatu, Bureau National du Plan, Bureau du Premier Ministre.

Vanuatu NPO (1982). First National Development Plan. Port-Vila: Republic of Vanuatu, National Planning Office.

Vanuatu SO (1983). Vanuatu's foreign trade 1983-1984. Port-Vila: Republic of Vanuatu, National Planning and Statistics Office, 282 p.

Vanuatu NPSO (1984). The mid-term review of Vanuatu's first National Development Plan. Port-Vila: Republic of Vanuatu, National Planning and Statistics Office.

Vanuatu NPSO (1986). Vanuatu's foreign trade 1983-1984. Port-Vila: Republic of Vanuatu, National Planning and Statistics Office, 180 p.

Vanuatu NPSO (1990). Second National Development Plan. Port-Vila: Republic of Vanuatu, National Planning and Statistics Office, vol. 1.

Vanuatu OS (1983). Rapport sur le recensement de la population de 1979. Vol. 1: tables de base. Port-Vila, République du Vanuatu, Office de la statistique.

Vanuatu SO (1991). Vanuatu National Population Census May 1989, main report. Port-Vila, Republic of Vanuatu, Statistics Office.

Weightman, B. (1989). Agriculture in Vanuatu, an historical review. Portsmouth: British friends of Vanuatu publish.

World Bank (2005). World Development Indicators 2005, Washington D.C, World Bank.

Corresponding Author: Gilbert David [gilbert.david@ird.fr] is a marine and island geographer and currently Director of Research at the Institute for Development (IRD) in Montpellier (France).

He has extensive working experience on vulnerability and viability of island countries and territories, including the Caribbean (Haiti, Martinique), Melanesia (New-Caledonia, Vanuatu) and the Western Indian Ocean (Comoros, Madagascar, Reunion).

Archaeological studies of shell-remains at Punangatu (Futuna island/Vanuatu) – How can we identify and classify shellfish to understand their historical use?

Lucas Sarvanu[1] *& Matthias Kowasch*[2]

[1] Université Paris 1 Panthéon-Sorbonne, 12 Place du Panthéon, 75231 Paris, France, E-mail: lucas.sarvanu@gmail.com

[2] University College of Teacher Education Styria, Hasnerplatz 12, 8010 Graz, Austria, E-mail: matthias.kowasch@phst.at

DOI: 10.23791/542529

Abstract: *This article, based on the master's thesis of the first author, aims to identify and classify by species different shellfish collected in a Vanuatu archaeological site. We want to analyse how these shells have been modified and utilized to produce furniture and artefacts. The results show that the Punangatu shell assemblage is dominated by Gastropods, in particular by the families of Turbnidae and Trochidae, which were easy and accessible to exploit. The two families are still consumed today. But the share of shellfish and the importance of fishing during the island's initial settlement and over time remains unclear. It would be necessary in the future to study other sites of the island to better understand the societal role of marine resources.*

Keywords: *Futuna island, Vanuatu, shellfish, Gastropods, archaeological surveys*

[Submitted as Research Note: 18 June 2020, acceptance of the revised manuscript: 28 October 2020]

Introduction

Futuna is a high island which geographically lies in the southern Vanuatu archipelago (Fig. 1). It is more precisely located to the east of the island of Tanna, and is part of the province of Tafea. The work carried out by North American archaeologists Richard and Mary Elizabeth Shutler in the 1950s and 1960s on Futuna highlighted the prehistoric occupation of the island and allowed for the discovery of several burials in rock shelters (Shutler et al. 2002). New work has been taken up on Futuna within the framework of two complementary projects: "Polynesian enclaves in Vanuatu: Funerary archeology and definition of Polynesian migrations", led by Valentin (CNRS) and funded by the Archaeological Excavations Commission, Minister des Affaires Etrangères (MEAE), 2017-2020; and "3000 years of settlement and interaction in southern Vanuatu" (DP 160103578), co-led by Flexner (University of Sydney), Bedford (Australian National University) and Valentin (CNRS), and funded by the Australian Research Council (ARC). The first results document outdoor occupations by the sea (Flexner et al. 2018).

The first author's research involves studying the shells of an archaeological test pit (Unit A) in a rock shelter in Punangatu on the island of Futuna. The objectives are to identify the different shellfish collected, and to classify them by species according to the different layers in order to understand the methods of their use over time. The aim is also to identify shells that have been modified to produce artefacts or archaeological furniture, for example shell adze, ornaments and shell ornaments (such as hooks, pearls, and bracelets).

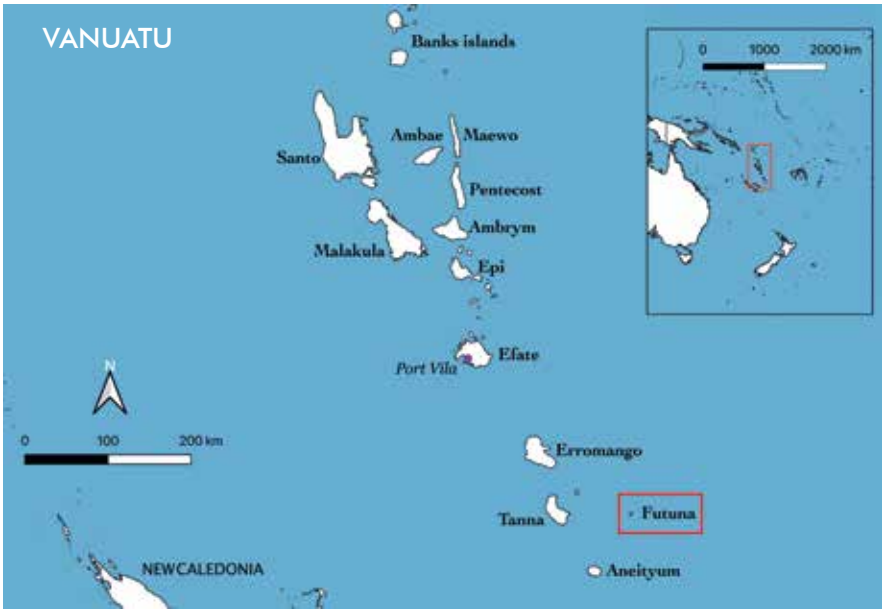


Figure 1: Localisation map of Futuna island in the archipelago of Vanuatu.

Sources: Maps of the World 2019; Kowasch 2020. Cartography: Kowasch 2020.

Human groups settled for the first time during the Lapita expansion around 3000 BP in Vanuatu (Kinaston et al. 2014; Kirch 1997). Occupations dating from this period have been discovered in the north and center of the archipelago (Bedford 2006). This ancient occupation, according to research, seems less developed in the south of the archipelago, although

there is evidence of Lapita sites in Aneityum and Erromango (Bedford et al. 2016)(Fig. 1). Fishing and the collection of marine resources played a key role from the start of settlement (Bellwood 1985; Sand and Bedford 2007). Fish and shellfish make up a large share of food resources (Bouffandeau et al. 2018; Claassen 1991). At that time, shells were also used to make ornaments (Langley et al. 2019) and artefacts (Szabo 2010). These marine resources still play an important role in the economies and daily life of Vanuatu islanders. However, recent archaeological research has highlighted cultural transformations (Bedford and Spriggs 2014). In central and northern Vanuatu, the share of fishing and shellfish collecting has evolved over time. From 2,500 years BP, the food of populations seems based on terrestrial products rather than marine resources (Valentin et al. 2010; Valentin et al. 2014; Kinaston et al. 2014). Comparable studies do not exist for the south of the archipelago.

Malacological research also makes it possible to define the different categories of shellfish species found in certain sites and the choices involved in the exploitation of these marine resources. The collection of shellfish was assumed to correspond to an optimal pattern of foraging in different areas for the first occupants of Punangatu (Bedford 2006). It is a first step to distinguish anthropogenic deposits and natural deposits.

Anthropogenic shell mounds are defined as sites where prehistoric or contemporary humans live, where they practice the daily activities necessary for the survival of the group, where they dispose of their waste and where, sometimes, they bury their dead. They can also be found in rock shelters, as in the case of Punangatu, around areas of habitat or outside in another place. In these anthropic shell mounds, one can find all kinds of shells which can be modified or not, and which are linked to a domestic activity. Other terms can designate anthropogenic shell mounds in different countries such as "shell deposits", "kitchen middens", "midden", and "mounds" (Céci 1984:63; Figuti 1992:24). Another important point to emphasize is that shell deposits are not only prehistoric, but can also be recent.

There are also natural shell deposits. These mostly consist of either shells accumulated on the beach at the high-water mark, or dead shells in natural schools. Several criteria differentiate them from those of anthropogenic origin. Shellfish "tests", that is, shells, can be guided by physical factors such as the swell when they are deposited after their death (Henderson et al. 2002). This type of natural deposit will not have the same composition as anthropogenic deposits, and can contain imported species.

Among these natural factors of deposition can be cited those accumulated or brought by animals, such as for example certain birds, which cause shell breakings typical of tests (Claassen 1998). Depending on the avifauna in question, the shells can be broken into very small fragments and the sizes of the individuals are then, as for those of marine accumulation, disparate (Cocaign 1989; Vigié-Chevalier 1998). The action of the wind is not negligible either in the formation of certain accumulations of shells (Claassen 1998).

The factors presented above are not necessarily all observed for each natural deposit. In fact, it is the association of several of them that makes the difference vis-à-vis an anthropogenic repository. The presence of small shells in anthropogenic accumulations can correspond to a specialized use as bait of the malacofauna (Chenorkian 1983), or to animals fixed on the shells collected (Gruet and Prigent 1986).

The work presented here was undertaken as part of a Masters of Archaeology of the first author and focuses on the analysis and identification of a significant number of shells from the site of Punangatu, on the island of Futuna in the south of Vanuatu. The occupation of the site started at around 2000 BP and covers a long period which lasts until today. The objective was to obtain data on each stratigraphic layer in order to be able to analyze the exploitation of the marine resources implemented by the occupants of the site over time. The reflection revolves around several questions, centered particularly on the site of Punangatu but also relevant to the other archaeological sites of the island:

- Are there any changes in the composition of the shell assembly at Futuna?
- Is there a real change in the size of shells overexploitation over time in Futuna?
- How was the site occupied by its first occupants?

The first part of the paper sets out the material studied, in particular its history and excavation, as well as the different study methods used in this research. The second part of this malacological study details the results obtained. The third part discusses the issues raised.

Methods

Site description

As part of the Masters of Archaeology project, the study concerns a substantial collection of 15 kilograms of shellfish from the coastal site of Punangatu (see Fig. 2). It was obtained during archaeological excavations carried out in 2018 in which Frédérique Valentin (CNRS) and the paper's first author participated.

Excavation description

Punangatu is a rock shelter located in the northwest of Futuna Island in Herald Bay. The rock shelter is located about 200 meters from the sea and stretches along the coast with a length of 100 meters.

A 4 square meter excavation was undertaken at the site made up of four different units A, B, C and D. The excavation uncovered 8 stratigraphic layers (layer 1, layer 2 (composed of three passes), layer 3, layer 4, layer 6, layer 7, layer 8) and an archaeological structure (hearth feature = oven).

A 2m × 2m test pit was dug about ten centimeters from the rock shelter wall. The excavation was generally aligned from North to South and divided into four units: A, B, C, and D. The excavation does not only allow to make inferences about human occupations but to get a globally better understanding of the site. The rock shelter is quite large and could have been chosen to house a significant number of people. The four units were excavated to a depth of 200 cm. However, the excavation in unit C descends to a depth of 340 cm from the datum. The unit B test pit was only excavated to a depth of 150 cm because there was a large rock in the center of the excavation. The rock covered more than half of the test pit and appears to have been rolled along the slope. Adornments, pearl oysters, modified shells, hooks, and a ceramic sherd were discovered at a depth of 180-190 cm, corresponding to the layer 7. Two hooks were discovered in unit A at a depth of 70-80 cm (layer 2) and unit B at 90-100 cm (layer 3) below the datum. The one in unit A is probably the top part of the hook to which the string is attached and the one in unit B seems to be the part of the base that forms the sharp edge forming the hook. Archaeological tools made from Conus sp were

also discovered in units A and C.

However, the archaeological material mainly comprises shells that were exploited by the former occupants of the site, made up of several different species. We have studied the shells coming from unit A as part of this research.

Stratigraphy

Layer 1 corresponds to the upper layer. It is between the surface and 60 cm. It is a layer of brown color mixed with sand. We were able to notice the presence of shells as well as charcoal but no animal bones. This layer was impacted by the passage of Cyclone Pam in 2015, hence the presence of sand washed in by the action of the waves.

Layer 2 corresponds to the second stratigraphic layer with a depth of 60-90 cm. It is composed of dark brown soil mixed with sand in the eastern part of the test pit. It contains a structure covering the entire excavation. We could see a strong presence of shells, charcoals, some modified shells as well as bones. We found a hook in this layer made from a *Turbo marmoratus* in the western part of the hole. We took a soil sample there.

Layer 3 corresponds to the third layer of the excavation. It is between 90-100 cm. The color of the ground is dark black with some charcoals, shells, bones and some corals discovered at the bottom of the level. We discovered a structure (hearth feature) there.

Layer 4 is the fourth layer of the test pit located 100-110 cm deep. It includes a structure (hearth feature) containing a large quantity of shells, bones, corals and the presence of large stones at the bottom.

Layer 5 corresponds to the fifth layer of the excavation of unit A with a depth of 110-120 cm. This layer contains a deposit of sand with charcoals, animal bones and stones on the surface. We found fish bones as well as crustacean (crab) remains.

Layer 6 is found at a depth of 120-140 cm. The color of the ground is black brown and it contains shells as well as bones of animals covered with large stones forming a structure (hearth feature). We also found fish bones and charcoal.

Layer 7 is found at a depth of 150-180 cm. The soil has a texture of sand mixed with gravel containing human bones, fish bones and shell fragments. There is also the presence of a human tooth, quartz, shell pearls, modified shells and a potential ceramic shard.

Source: Sarvanu 2018.

Figure 2: Archaeological site on Futuna island.

Layer 8 was the deepest deposit excavated, at a depth of 180-210 cm. It has a texture of black soil mixed with gravel in the southern part. We found shell fragments (*Turbo sp*), human bones, quartz, a small ceramic sherd and charcoal. It is limited by a large stone which is the extension of the wall of a cave towards the southwest part.

Dating

Concerning the dating, charcoal samples were taken, in particular in the following stratigraphic layers: layer 4 (100-110 cm) of unit A; and layer 11 (230-240 cm) and layer 12 of unit C (300-310) cm. For the dating, we have only focused on those two layers (11 and 12). Layers 11 and 12 were not studied because of the low quantity of shells. The charcoal samples were sent to the University of Waikato (New Zealand) for dating in the Radiocarbon Dating Laboratory (RDL). According to the results obtained, layer 12 of unit C dates from 2279 ± 18 BP (Calibrated date), (Wk49080 R_Date), and layer 11 of unit C dates from 386 ± 20 BP (Calibrated date), (Wk4978 R_Date). These two stratigraphic layers (layer 11 (230-240 cm) and layer 12 (300-310 cm)) of unit C correspond to a certain period of occupation of the site between 3000 and 2300 BP +. The first occupation of the site is therefore directly post-Lapita. Layer 4 (100-110 cm) of unit A corresponds to a much more recent period of occupation occurring before European contact. These results demonstrate that the occupation of the Punangatu site is very old and also show an evolution of occupation by these former occupants.

Identification

Several steps and criteria are necessary for the identification and classification of shell species. First of all, the general form of the shells makes it possible to associate a shell with a class:

- Turbine or conical shell: class of Gastropods
- Shell composed of two valves: class of Bivalves

For these identifications, we drew on the nomenclature proposed in the thesis of Dupont 2003: "The malacofauna of mesolithic and neolithic sites of the Atlantic facade of France".

This method of study also makes it possible to associate the different malacological species by their genus, their scientific name, as well as their family. This method is used for all stratigraphic layers, i.e. layer 1, layer 2, layer 3, layer 4, layer 6, layer 8 and the hearth feature structure of the unit A test pit. It also facilitates the sorting of shells in order to classify them into two major classes: Bivalves and Gastropods.

Different vernacular names are used for the same species in different regions of the world. Likewise, scientific designations are sometimes revised by systematicians in general. For example, a shell, formerly called *Turbo setosus*, has been renamed *Turbo argyrostomus*. The ignorance of some of the synonyms can lead to confusion of malacofaunal specters. Certain differences between the malacofauna spectra of two sites can be diverted or changed by the use of variable names according to the authors and according to the work to which they refer to identify or determine the species (Dupont 2003).

The characteristics of the species correspond to current data on their biology and ecology. On the species pres-

entation sheets, the dimensions are also mentioned, because they present an important characteristic of the specific determination. The measurements carried out correspond to those obtained on the archaeological samples.

Quantification

In the context of this research, the quantification method makes it possible to count the different species found in each layer. Depending on the information sought and the excavation techniques used, the study of shells or malacology can be quantified according to several variables. Three of them were applied to the archaeological material studied: weighing, the Number of Remains (NR) and the Minimum Number of Individuals (MNI).

The weight of the remains provides a quantitative approach to each species present in the survey. The weighing also allows to have a total mass and a proportion in percentage of the quantity of each species, in particular the Bivalves and the Gastropods present in each stratigraphic layer.

After the weight, we used the percentage calculation for each layer. This method calculates the total percentage of each malacological species by multiplying the total weight of each species by 100 and dividing by the total weight of the layer.

This method makes it possible to assess the proportion of each species and to make comparisons between the layers. The calculation of the percentage also permits to highlight the rate of consumption and a comparison of each malacological species of the survey as a whole.

The Number of Remains corresponds to the count of all shell fragments and whole shells, the largest dimension of which is greater than or equal to a certain size, whether the test is whole or not. The minimum size taken as a reference is necessarily dependent on the sampling technique. In addition, the NR is very sensitive to the degree of fragmentation of archaeological material (Chaix and Méniel 1996: 56). Theoretically, a mesh of 5 millimeters is necessary for counting the smallest species of shellfish; this is what was used during the excavation of the Punangatu site.

The MNI makes it possible to limit the distortion of fragmentation of shellfish in the counting (Chaix and Méniel 1996: 56). In this malacological study, certain criteria were used to differentiate the MNI from the NR. For Turbine Gastropods, the count of the MNI is associated with the presence of the "opening" and the "peristome" of the shell. This approach is also applied for Bivalves depending on the location and presence of the "hinge" and that of the "palleal sinus". It allows to relate a total mass of shells to an average mass of an individual. This mass value is used to get an estimate of flesh and what is consumed (Dupont 2003).

Taphonomic Study

"Taphonomy is the study of all the processes that modify or transform an artifact after it has been abandoned" (Larousse Dictionary 2011). Taphonomic processes are distinguished by their physical impact on the shells and are often easily recognizable. Their order of discussion will be concretion, perforation, fragmentation, abrasion or abduction and erosion. The cultural process of consumption by the former occupants of the site will complete the picture (Claassen 1993).

Many aquatic animals look for a hard surface (or substrate) to support their skeleton, and shells are often chosen. Coastal archaeologists are well aware of the attachment of oysters to each other, as well as barnacle concretions. The activities of these creatures erode the peristome or opening, erode and hollow the surface of the shell. Heavy encrustations occur on exposed dead shells and at the water-sediment interface in calm or low-energy aquatic habitats. The shell ornaments increase the available surface. The mineralogy of shells also influences the levels of concretions (Claassen 1993).

The modification or fracturing of the shell of the species may have started well before their burial in the sediment. The shells can be affected by anthropogenic or natural stigmas of their environment, by their disposal by humans or by their discovery during the excavation of archaeological sites or even after.

The action of lithophages or parasitic marine organisms (fungi, cyanobacteria, ...) should not be overlooked. Abductions by these marine parasites mainly appear on the columellar edges of the opening and on the last turn or spire, because they are the fragile parts of the shell.

To assess the fragmentation rate in the two selected stratigraphic layers (Layer 2 and Layer 4) and the burnt feature structure, the study relied on a classification of three different categories of shell fragments. For this, we used three different criteria, namely: FPC = almost complete fragment where there is the presence of an opening (peristome) and apex; FMC = complete medium fragment where we only have the presence of an opening but no apex; and PF = small fragments. These criteria help to determine if the fragmentation is due to an anthropic activity (if they were fractured by a striker or not), or natural, in particular trampling and disturbances linked to natural disasters for example.

The taphonomic study also permits to study anthropogenic modifications. For this, a study centered on the shapes of the perforations is carried out, examining whether they are circular or rectangular. Then comes examination of the aspect of the edges – whether they are serrated, smooth or dense. Finally, it is also important to measure the size (in millimeters) and the location of the perforations. These methods generally allow us to determine if the perforation is due to an anthropic activity (human activity) or a natural deposit.

First results

Concerning the study of this malacological collection, we were able to note a significant number of malacological species in the assembly.

The composition of the assembly of the unit A test pit makes it possible to determine the main malacological species found and exploited by the ancient human groups of Futuna. The families of Gastropods are much more represented than the families of Bivalves. By studying the assemblage in its entirety, we could note a strong domination or concentration of gastropods, more particularly the turbos with three different species (*Turbo setosus, Turbo margaritaceus, Turbo argyrostomus*) and the trochus with in particular three different species (*Troca niloticus, Troca malaticus, Trochus verrucosus*) in each layer.

This strong domination of gastropods could result from the fact that prehistoric populations were oriented more towards the collection of gastropods than bivalves. Collecting or picking up gastropods is also easier and faster because these malacological resources are often found on the coral reef, in particular turbos and trochus for example.

To summarize, we were able to note an important representation of the Gastropods, more particularly of the families of *Turbinidae* and *Ttrochidae*. On the other hand, certain species less represented in the assemblage (the cowries *Cypraea sp* and *Tridacnidae*) could perhaps indicate the result of cultural exchange because

the shells were economically valued (such as for ceremonial events) in Futuna and its surrounding islands.

Conclusion

In order to describe the evolution of the various activities related to the exploitation of marine malacofauna at the Punangatu site, several methods have been applied to the archaeological material. The implementation of these methods of study, such as the taphonomy of shells, contributes to understand the collection of significant quantities of shells on the archaeological sites of the island. The species give us information on their position on the coral reef. This allows to identify the places exploited by humans in the collection of seashells, and whether these marine resources are accessible on dry feet or not. The study of shell mounds therefore tells us whether the shells have been collected washed up (dead) on the beach or before.

The Punangatu shell assemblage is dominated by Gastropods, and more particularly by the families of Turbnidae and Trochidae. This malacological dominance suggests that the former occupants of the site favored the exploitation or collection of Gastropods rather than Bivalves. This dominant composition may be because these two species are easier to collect or because the others are absent. In all the layers of test pit A, we find the strong dominance of Turbinidae and Trochidae compared to other malacological species. These alone represent 90% of the assemblage. The two families are still consumed today in Vanuatu. The exploitation of marine resources in Punangatu is mainly intended for subsistence activity.

The share of shellfish in food and the importance of fishing compared to other land-based subsistence activities, during the island's initial settlement and over time, remains unclear. However, this is a major question that would contribute to define whether the exploitation of marine resources was a priority for these first occupants of the island. For this, it is necessary to study other sites of the island to better answer this question.

Nevertheless, the geographical location of the site has shown that the former occupants of the site were rather oriented towards subsistence activity, focused on the exploitation of marine resources. The type of occupation of this site is temporary, possibly even a camp, which favored the exploitation of these marine resources.

Acknowledgements

The authors are deeply thankful to Emilie Dotte (University of Western Australia) and Kerryn Baker (Australian National University) for comments and proof reading.

References

Bedford, S. (2006). Pieces of the Vanuatu Puzzle: Archeology of the North, South and Centre, Canberra, Terra Australis 23, The Australian National University, Pandanus Press. Online: http://epress.anu.edu.au/ta23_html

Bedford, S. and C. Sand (2007). Lapita and Western Pacific Settlement: Progress, Prospects and Persistant Problems, In S. Bedford, C. Sand and S.P. Connaughton (eds.), Oceanic Explorations: Lapita and Western Pacific Settlement, Terra Australis, Pandanus Books, ANU Press, Canberra, Vol. 26: 1-15.

Bedford, S. and M. Spriggs (2014). The Archaeology of Vanuatu: 3000 Years of History across Islands of Ash and Coral. In: Cochrane, E. and T. Hunt (eds.), The Osford Handbook of Prehistoric Oceania, Oxford: Oxford University Press, pp. 1-17.

Bedford, S., M. Spriggs and R. Shing (2016). By all means let us complete the exercise: the 50-year search for Lapita on Aneityum, southern Vanuatu and implications for other "graps" in the Lapita distribution, Archaeology in Oceania, 51(2): 122-130.

Bellwood, P. (1985). Prehistory of the Indo-Malaysian Archipelago. Orlando: Academic Press.

Bouffandeau, L., P. Béarez, S. Bedford, F. Valentin, M. Spriggs and E. Nolet (2018). Fishing at Arapus-Mangaasi, Efate, Vanuatu (2800–2200 BP): New methodological approaches and results, Journal of Archaeological Science: Reports (18): 356-369.

Céci, L. (1984). Shell midden deposits as coastal resources. World Archaeology, 16(1): 62-73.

Chaix, L. and P. Méniel (1996). Éléments d'archéozoologie, Éditions Errance, Paris.

Chenorkian, R. (1983). Contribution d'une étude de la paléoécologie des lagunes de Basse Côte-d'Ivoire. In : 1er Symposium « Archéologie africaine et sciences de la nature appliquées à l'archéologie », Édition Paris ACCT CNRS CRIAA DL, Bordeaux, pp. 315–338.

Claassen, C. (1991). Normative thinking and shells bearing sites, Archaeology Method Theory 3: 249-198.

Claassen, C. (1993). Problems and choices in shell seasonality studies and their impact on results. Archaeozoologia V(2): 55-76.

Claassen, C. (1998; 2009). Shells. Cambridge Manuals in Archaeology. Cambridge: Cambridge University Press.

Cocaign, J.Y. (1989). Diversité des dépôts coquilliers, l'exemple de la côte nord-est de la Bretagne. AMARAI, 2: 47-59.

Gruet, Y. and D. Prigent (1986). Les buttes de Saint-Michel-en- l'Herm (Vendée): caractères de la population d'huîtres (Ostrea edulis Linné) et de sa faune associée. Haliotis, 15: 3-16.

Dupont, C. (2003). La malacofaune de sites mésolithiques et néolithiques de la façade atlantique de la France: contribution à l'économie et à l'identité culturelle des groupes concernés. Université Paris 1 Sorbonne, thèse doctorale de Préhistoire, Ethnologie et Anthropologie.

Figuti, L. (1992). Poissons, coquillages et préhistoire. Les Dossiers d'Archéologie 169: 24-27.

Flexner, J.L., S. Bedford, F. Valentin, R. Shing, T. Kuautonga & W. Zinger (2018). Preliminary Results of the South Vanuatu Archaeological Survey: Cultural Landscapes, Excavation, and Radiocarbon Dating. Asian Perspectives 57(2), 244-266. doi:10.1353/asi.2018.0016.

Henderson, W.G., L.C. Anderson & C.R. McGimsey (2002). Distinguishing natural and archaeological deposits: stratigraphy, taxonomy, and Taphonomy of Holocene Shell-rich accumulations from the Louisiana Chenier plain. PALAIOS, 17(2): 192–205.

Kinaston, R., H. Buckley, F. Valentin, S. Bedford, M. Spriggs M, et al. (2014). Lapita Diet in Remote Oceania: New Stable Isotope Evidence from the 3000-Year- Old Teouma Site, Efate Island, Vanuatu. PLoS ONE 9(3): e90376. doi:10.1371/journal.pone.0090376

Kirch, P.V. (1997) The Lapita Peoples: Ancestors of the Oceanic World. Oxford: Blackwell.

Langley, M.C., S. Bedford, M. Spriggs & I. Phillip (2020). Manufacture and Use of Lapita Conus Multi-Segment Broad Rings: Evidence from the Teouma site, Central Vanuatu, The Journal of Island and Coastal Archaeology, 15:3, 364-383, DOI: 10.1080/15564894.2019.1570989

Szabo, K.A. (2010). Shell Artefacts and Shell-Working within the Lapita Cultural Complex. Journal of Pacific Archaeology, 1 (2), 115-127.

Shutler, M.E., E. Shutler Jr. and S. Bedford (2002). Further detail on the archaeological explorations in the Southern New Hebrides. In S. Bedford, C. Sand and D. Burley (eds.), Fifty years in the field – Essays in honour and celebration of Richard Shutler Jr's archaeological career. New Zealand Archaeological Association.

Valentin, F., H.R. Buckley, E. Herrscher, R.L. Kinaston, S. Bedford, et al. (2010) Lapita subsistence strategies and food consumption patterns in the community of Teouma (Efate, Vanuatu). Journal of Archaeological Science 37: 1820–1829.

Valentin, F., E. Herrscher, S. Bedford, M. Spriggs & H. Buckley (2014). Evidence for Social and Cultural Change in Central Vanuatu Between 3000 and 2000 BP: Comparing Funerary and Dietary Patterns of the First and Later Generations at Teouma, Efate, The Journal of Island and Coastal Archaeology, 9:3, 381-399, DOI: 10.1080/15564894.2014.921958

Vigié-Chevalier, B. (1998). Du déchet alimentaire à l'objet coquillier : le statut des coquillages en milieu archéologique. In Camps, G. (ed.), L'Homme préhistorique et la Mer, Actes du 120e Congrès national des Sociétés historiques et scientifiques, Aix-en-Provence, 23-26 October 1995, Paris, CTHS: 351–354.

Corresponding Author: Lucas Sarvanu [lucas.sarvanu@gmail.com] is a master student from Port Vila (Vanuatu). After a bachelor degree in geography/history at University of New Caledonia, he started a master programme at Panthéon-Sorbonne University in Paris (France). He specializes on shellfish analyses on Futuna island (Vanuatu).

Introduction of the Austrian South Pacific Society (OSPG)

The Austrian South-Pacific Society (OSPG, Österreichisch-Südpazifische Gesellschaft) and Pacific Geographies Journal are collaborating in a new format, with the aim of increasing the Pacific-related information flow to prospective members and readers. Starting with this issue, the OSPG will regularly contribute to Pacific Geographies with topics relevant for Oceania research, current developments, and debates or input from selected OSPG programme activities. We are looking forward to a fruitful dialogue and exchange with the readers of Pacific Geographies.

The OSPG is a scientific non-profit-association that aims at offering a platform to anyone interested in Oceania, shedding light on current developments and events, new scientific approaches and historical occurrences. Our members come from a wide variety of backgrounds, which makes the exchange particularly diversified.

Currently chaired by Elisabeth Worliczek, the OSPG was founded in 1996 by Hermann Mückler, Ingfrid Schütz-Müller (†) and Raimund Pawlik who are / were all members of the Faculty of Social Sciences in Vienna; ever since, the association has had its headquarters at the Department of Social and Cultural Anthropology at the University of Vienna. Most of our board members are University of Vienna alumni.

Academic work from an anthropological perspective is a key concern for the OSPG. For over 100 years, there has been a considerable number of academics in Vienna who have contributed to knowledge of Oceania. Nowadays, scholars active in this field of research are members of the OSPG. Alongside academic work, the OSPG considers itself as a forum for information and debate on topics relevant to Oceania - not only for academia, but also open to individuals who are generally interested in the region and its people.

We share not only our passion for the Pacific, but also information on the diversity of Pacific cultures and lifestyles. Knowledge is collected, published and made available to a wider public (in particular through the two publication formats "NOVARA" and "Pazifik Dossier").

In addition, great emphasis is laid on the cultivation of cultural and social contacts between Austria and Oceania through collaborations.

Our activities include a regular lecture series organized by the OSPG with speakers from Austria and abroad, presenting their research on Oceania. We invite internationally renowned scholars as well as young aspiring researchers to present their work and to share and discuss it with our members. The format of the lecture series is interdisciplinary and multimodal. However, our portfolio goes beyond mere lectures; a full list of our activities is listed in the table 1.

We hope to welcome you at one of our upcoming events, and we are always happy about new members joining. You don't need to be based in Vienna in order to become a member of OSPG.

Some exemplary activities held over the last few years were for example two photo exhibitions "OFA A'TU - love and other gestures" (2016) and "Encounters in the Solomon Islands (2010), symposia like "Human Rights in the Pacific" (2012) and "200 Years James Cook Collection in Vienna" (2006), film screenings that are always followed by a thorough analysis and discussion "Te kuhane o te tupuna" (2019), "Imulal: a land, its roots and dreams" (2016) and "In the wake of the Bounty" (2007) as well as our regular lecture series.

The lecture series draws from a variety of backgrounds. In 2019 for example, our lecturers filled us in on: the nickel mining activities and the process of decolonisation in New Caledonia; climate change and agriculture in Papua New Guinea; oral traditions from Hawai'i and Aotearoa and their use and misuse in contemporary society; and kitsch, cliché and daily live in the Pacific Islands.

2020 has been a challenging year so far, since we had to cancel our lectures and we hope that in autumn, we will again be able to invite scholars to Vienna. So far, we are pleased to announce that we will be hosting a young scholar session at the Vienna Anthropology Days (VANDA) Conference (28 Sept – 1 Oct, 2020) on "More than a cliché and the dream of the South Seas? Young research in and about the South Pacific". We are looking forward to a fruitful exchange with the participating young scholars from across Europe. Currently we are planning to make the session's content available to a broader audience.

Table 1: Overview of OSPG-activities

Regular scientific lectures from lecturers coming from the Pacific Islands, Austria and abroad
The publication series NOVARA and the Pazifik-Dossier
Presentation of scientific works from young scholars
Photo exhibitions
Presentations of movies including panel discussions
Art exhibitions
Organization of international conferences and symposia
Guided visits through exhibitions and museums
Book launches
Invitations to artists and scholars from the Pacific Islands
Lectures, workshops and seminars
Pacific-focused city walks in Vienna
Networking with scientific initiatives / associations / institutions with focus on the Pacific Islands in Europe and internationally
Parties
Events in cooperation with other organizations and associations

ÖSTERREICHISCH-SÜDPAZIFISCHE GESELLSCHAFT (OSPG)
Institut für Sozial- und Kulturanthropologie
Universität Wien
Universitätsstraße 7/ NIG/ 4. Stock, A-1010 Wien
e-mail: ospg@univie.ac.at
homepage: https://www.univie.ac.at/ospg/english/

ÖSTERREICHISCH-SÜDPAZIFISCHE GESELLSCHAFT

Fig. 1: OSPG members at a joint meeting with the German Pazifik Netzwerk

Fig. 2: Kava session at the joint meeting of OSPG and Pazifik Netzwerk in Passau 2019

Fig. 3: The popular lecture series attracts a wide range of people

Fig. 4: Festivities to celebrate 20 years of OSPG

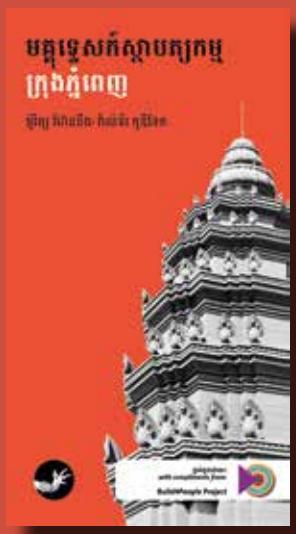
Fig. 5: Visiting the hidden treasures of Oceania in the storage of the Institute for Social and Cultural Anthropology at the University of Vienna

Source: Fig. 1, 2: OSPG 2018; fig. 3: OSPG 2019; fig. 4: OSPG 2016; fig. 5: OSPG 2020.

ADVERTISEMENT NEW PUBLICATION 2020

Architectural Guide Phnom Penh

Moritz Henning / Walter Koditek



Khmer language edition available from early 2021

DOM publishers

Founded in the fifteenth century, planned and rebuilt by the French, and then modernised and expanded in the era after independence, the city of Phnom Penh displays a diverse mix of styles. Here, early religious and vernacular buildings, the glittering structures of the Royal Palace, and colonial buildings of the French Protectorate (1863–1953) coexist with the gems of the 'New Khmer Architecture' of the 1960s. After the destructive period under the Khmer Rouge, the city went through a rebirth. It has seen rapid modernisation and economic development in recent years, and its urban landscape is transforming at a breathtaking pace.

This guide offers a comprehensive overview of Phnom Penh's built heritage, highlighting its history and architectural layers. In addition to covering better-known masterpieces, it also takes readers through the city's 'everyday architecture', revealing places off the beaten track. Illustrated with contemporary photographs and historical images, the book presents more than 140 works that illuminate the four major phases of development in the city's ever-changing urban history. It thus makes an important contribution to current debates on heritage preservation in the booming metropolis. Interviews with local experts present their individual perspectives on the city and place the buildings in a broader context.

Size: 134 × 245 mm, 364 pages - 450 pictures - Softcover - SBN 978-3-86922-434-3 - € 38.00 incl. VAT., excl. shipping costs - https://dom-publishers.com/products/phnom-penh

PUBLISHED WITH SUPPORT FROM

FRANGIPANI VILLA HOTELS® MAADS Jumbo Gypsum 正鋼石膏建材 JOTUN Universität Hamburg