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Assessing the contribution of a prevention fund to non-communicable disease prevention in French Polynesia: an ecological approach

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LIST OF ACRONYMS

ACFP: Annual Call For Proposals

BMI: Body mass index

CPS: « *Caisse de Prévoyance Sociale* »

CTC : « *Chambre Territoriale des Comptes* » or Territorial Audit Chamber

FPAM: « *Fonds prévention Assurance Maladie* » or Prevention Fund

ISPF: Statistics Institute of French Polynesia

LM: “*Longue Maladie*” for long-term illness

LMIC: Low and middle-income countries

NCD: Non-communicable disease

PIC: Pacific Island Country

PSG : “*Protection Sociale Généralisée*” or universal social protection

SOS : “*Schéma d’Organisation Sanitaire*” or health organisation plan

SPPS : “*Schéma de Prévention et de Promotion de la Santé*” or prevention and health promotion plan

WHO: World Health Organization

ABSTRACT

Background: Controlling the relentless rise of non-communicable diseases (NCD) is a major public health challenge in French Polynesia, where prevalence of obesity and related chronic pathologies are amongst the highest worldwide. Despite significant investments in prevention, little is known about the real contribution and public health reach of local funding mechanisms like the *Fonds de Prévention Assurance Maladie* (FPAM) led by the *Caisse de Prévoyance Sociale* (CPS). The ecological approach assesses how interventions address multiple levels of influence, including individual, organizational, community and policy environments.

Research question: To what extent do local NCD prevention projects funded by the FPAM align with public health priorities and incorporate an ecological approach?

Methods: This is a retrospective study on projects funded by the FPAM between 2017 and 2024. Quantitative analysis described the distribution, themes and population reach of FPAM-funded projects for this period. Then, a qualitative analysis was conducted on two 2019 and 2023 samples, applying the ecological framework to identify the levels of influences targeted by projects and their intervention strategies adopted.

Results: The FPAM funded a total of 115 projects between 2017 and 2024 with total investment reaching approximately 1 700 000€. The projects focused more on promoting physical activity, with mean exposures of 6.75 months. The ecological framework revealed that most projects targeted directly individual behaviour change, while only a small part addressed organizational, community or policy-level determinants with multi-level or structural strategies.

Conclusion: While the FPAM has contributed to the implementation of a broad range of prevention initiatives, in line with the local public health priorities, they remained largely focused on individual-level interventions. Expanding its support for projects that address multiple levels of influence is essential to enhance the effectiveness and sustainability of NCD prevention in French Polynesia.

Keywords: Non-communicable diseases; prevention funding; ecological approach; health promotion; French Polynesia

INTRODUCTION

The burden of non-communicable diseases

Over the last century, non-communicable diseases (NCDs) have become the leading cause of mortality and morbidity globally. They now account for 75% of global non-pandemic-related annual deaths with close to 41 million people dying from NCDs each year.^{1,2} They include hundreds of chronic diseases, but the majority of the burden is due to cardiovascular disease, cancer, chronic respiratory disease and diabetes.³ Most of these pathologies are preventable and share well-established common risk factors like physical inactivity, poor nutrition, tobacco use, alcohol consumption, hypertension, hyperglycaemia, obesity or stress.⁴ Prevention is a recognised key strategy to address this public health emergency, and yet, the steady global rise in NCD prevalence suggests that its effective implementation remains complex challenging.⁵

NCDs represent a particularly urgent threat in the Pacific region, where they represent 1/4th of NCD deaths globally, reaching the second position among all six WHO regions.⁶ WHO statistics from 2022 estimates that 43% of adults were overweight and 16% were living with obesity around the world.⁷ Interestingly, Pacific Island Countries (PICs) account for nine out of the ten countries with the highest obesity prevalence in the world, French Polynesia being the 9th.⁸

In French Polynesia, the latest territorial survey assessing NCD risk factors amongst the population, “STEPS 2019”, confirms the gravity of the situation: 75% of adults were overweight and 48% obese, showing a considerable increase from 2010 (from respectively 70% and 40%).^{9,10} Besides, 42% of the adult population reported at least three NCD risk factors.¹⁰

Moreover, we can find equally worrying information on the Polynesian children’s health. The 2024 “*Ea Piahī – Santé jeune*” survey on health indicators and behaviours of 3118 students across the islands showed that only half reported a normal Body Mass Index (BMI), while 22.8% were overweight and 24.6% were obese.¹¹ According to the Global Burden of Disease Study 2021,¹² obesity prevalence among 5 to 14 years-old has more than tripled globally since 1990, and recent global projections warned that up to 15.6% of children aged 5–14 could be obese by 2050.¹³ In comparison, the 24.6% of obesity rate reported in the “*Ea Piahī – Santé jeune*” survey is exceptionally high. Besides, knowing that overweight and obesity in early life are proved to be important risk factors both for developing NCDs during childhood, but also for the obesity to persist during adulthood, these trends predict a concerning public health state for the future generations of French Polynesia.¹⁴

The economic burden of NCDs in French Polynesia represents a considerable threat on the financial sustainability of an already overstretched healthcare system.¹⁵ The *Caisse de Prévoyance Sociale* (CPS), the local social security institution, publishes every year the increasing costs of the chronic diseases rates' growth: in 2023, 16.7% of the population had the coverage status of “*longue maladie*” (LM), against 12.4% in 2010.¹⁶ They include NCDs like diabetes (17%), cardiovascular diseases (14%), hypertension (13%), malignant tumours (10%) and nervous system diseases (9%), reported in Figure 3 (APPENDICES). These cases alone accounted for an estimated 44 billion F CFP, approximately 938 000 F per person per year^a, and represented 69% of total health expenditures in 2023. In comparison, the mean cost for other patients are more than ten times lower (85 000 F CFP per person per year).¹⁶

For a healthcare system that is facing historical deficits (8.4 billion F CFP in 2018),¹⁵ and considering that chronic diseases have the heaviest (rising) impact on its healthcare expenses, the need for implementing effective prevention strategies across the territory stands as vital. Yet, there is only limited evidence on the efficiency of prevention initiatives implemented in French Polynesia. This thesis aims to address this question by studying the contribution of a public prevention fund, supporting local prevention and health promotion initiatives targeting NCD risk factors.

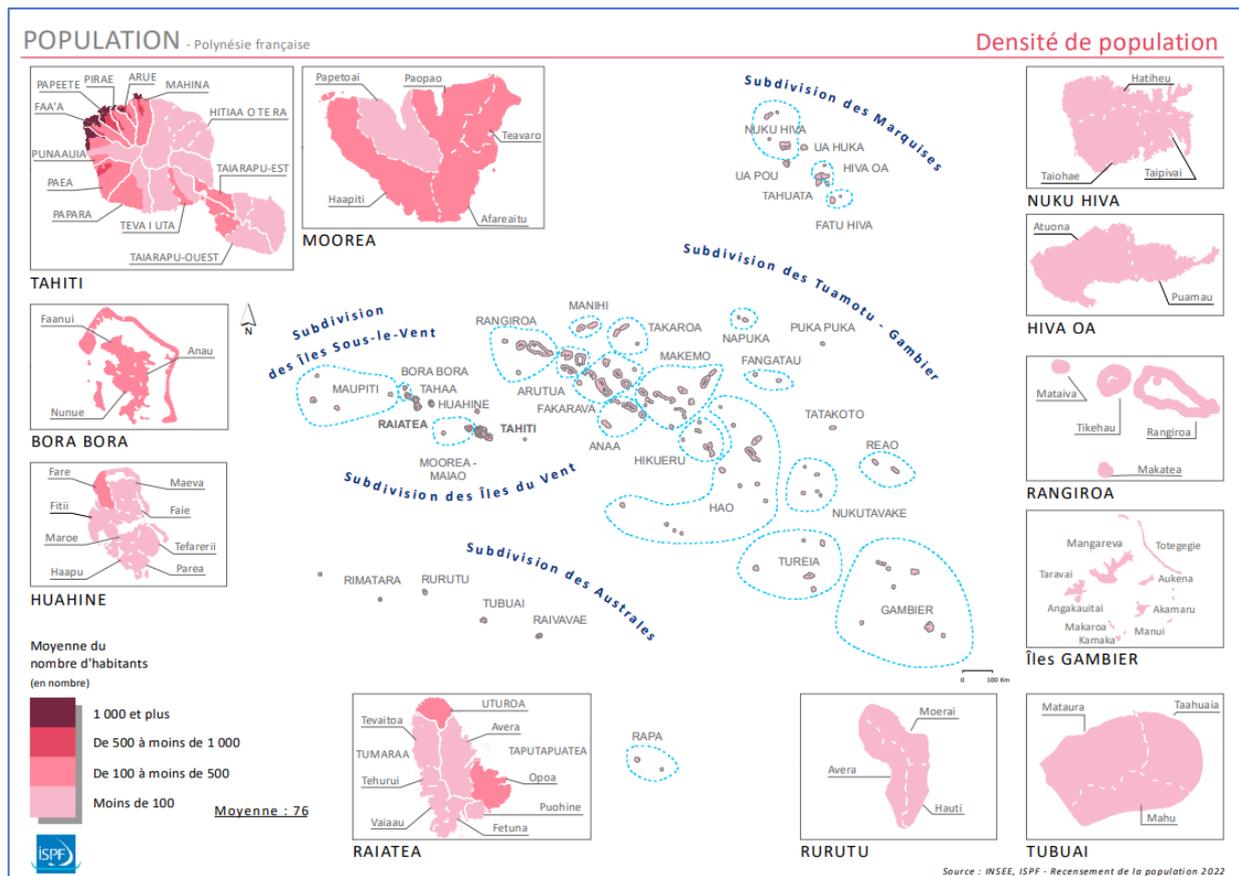
Prevention in French Polynesia

While 16 000 km away from the Hexagon, French Polynesia is a French territory operating under the specific status of “*Collectivité d’Outre-Mer*”. This unique status gives the territorial assembly large administrative and legislative autonomy, with full competency regarding law making.¹⁷ As a result, French Polynesia has its own healthcare system, that it organizes, manages and controls itself by defining and implementing its own health strategies, regulatory frameworks and service delivery models.¹⁸ While this status provides flexibility for the local government, the healthcare system struggles to face the challenges of growing chronic disease prevalence, along with demographic aging, political instability and economic uncertainty.

Besides, the Collectivity's insular geography and socioeconomic disparities represent significant challenges for structuring policy strategies and healthcare delivery. Counting approximately 279 500 inhabitants in 2024, the French Polynesian territory includes 118 islands spread across five archipelagos in the South Pacific and over 5 million km² of ocean.¹⁹ With a sea superficies as wide as western Europe, French Polynesia is among the most dispersed health systems in the world.

^a 368 941 804 €, i.e., 7 865 €/year/person

Figure 1 Population distribution in French Polynesia (source: INSEE/ISPF, 2022)



According to the Statistics Institute of French Polynesia (ISPF), approximately 75% of the population lives in *Tahiti* and *Moorea*, the Windwards Islands, and 2/3 of the islands are occupied by less than 500 inhabitants per island.²⁰ This considerable spatial dispersion, showed in Figure 1, highly contributes to inequities in access to healthcare and health promotion services, particularly outside urban centres.

The recent political instability, marked by the succession of 13 different governments between 2004 and 2013, considerably delayed the emergence of any structured health policy in French Polynesia.²¹ In 2011, the *Chambre Territoriale des comptes* (CTC)^a highlighted the complete absence of a “real health policy” for years and the uncompletedness of health indicators, in their evaluation report on the policy governing the health system.²² It is only by 2016 that we can clearly witness a shift, with a merging political commitment to reform the whole healthcare system. After years of stand-by, the definition and implementation of coherent strategies for the future of public health in French Polynesia is being discussed.

^a French financial jurisdictions responsible for auditing the performance of public management, monitoring compliance with the rules governing public management and participating in the evaluation of public policies

The strategic orientations for the “Health Policy 2016-2025”^a mark a strong commitment in prevention by clearly making the fight against obesity and other NCDs a priority. It introduces an intersectoral approach involving ministries beyond health, recognizing public health as a collective priority for the entire society, and not just the Health sector anymore.²³ Besides, the “Health Organization Plan 2016-2021” (SOS)^b and “Prevention and health Promotion Plan 2018-2022” (SPPS)^c further elaborates on the construction of strategies and more practical goals to tackle the risk factors, promote healthy behaviours and strengthen early detection of NCDs.^{24,25}

However, the implementation of these strategies has been very limited. Indeed, two recent CTC evaluations in 2019 and 2022 pointed out recurring patterns, common in many sectors in French Polynesia, preventing the successful application of these programs.^{22,26} Among them, the lack of operational indicators for every goal, overlapping programmatic documents, unrealistic timelines and insufficient coordination. Moreover, the unclear distribution of responsibilities between the institutions acting in prevention remained fragmented, hindering any effective governance.

Today, the Health Policy Plan 2016-2025 comes to an end, and no feedback or evaluation has been yet shared. During the “Health and prevention seminar” in March 2025, new orientations have been discussed between institutional stakeholders, with important social participation from local health associations, municipal mayors from several islands and traditional healers. Prevention and health promotion are once again at the heart of the future health organization plan for 2025-2031.

The Caisse de Prévoyance Sociale and the “Fonds de Prévention Assurance Maladie”

In a context where prevention is still in construction, the role of the *Caisse de Prévoyance Sociale* (CPS) deserves particular attention. The CPS is the social protection institution in charge of guaranteeing universal social protection, the *Protection Sociale Généralisée* (PSG) for the French Polynesian population.¹⁶ It provides all residents universal and integrated coverage for sickness, family benefits, ageing and disability, and covers up to 99.7% of the population.²⁷ Health insurance represents over 63 billion F CFP (around 528 million €), with 43.6 billion F CFP (around 365 million €) allocated to the care and treatment of “long-term illnesses” for 16.7% of the population.¹⁶ Because they are mostly preventable NCDs and represent 69% of total healthcare expenditures, the CPS has a direct financial stake in reducing the chronic disease incidence by engaging in upstream prevention.

^a “La politique de santé de Polynésie française : orientations stratégiques 2016-2025”

^b “Schéma d’Organisation Sanitaire 2016-2021” (SOS)

^c “Schéma de Prévention et de Promotion de la Santé 2018-2022” (SPPS)

Although not officially recognised as a prevention stakeholder, the CPS has progressively assumed a funding role in NCD prevention, especially with the creation of the *Fonds de Prévention Assurance Maladie* (FPAM) in 2012. It happened after the permanent closure of the main institution in charge of prevention in French Polynesia, the Public Administrative Establishment for Prevention (EPAP). The FPAM was conceived to fund local initiatives tackling behavioural risk factors that are common to the most prevalent NCDs in French Polynesia. The goal was to participate in decreasing the territorial NCD prevalence and eventually relieve the health system from long-term costs associated with those rising, but preventable, diseases. For several years, the FPAM represented the primary financial dispositive supporting NCD prevention and health promotion local projects in the territory.

While the French Polynesian Health Direction has progressively reinforced its leadership in prevention, the FPAM has nevertheless continued to operate as a distinct funding program. However, the 2022 report from the *Chambre Territoriale des Comptes* (CTC) highlighted significant limitations in the FPAM's governance.²² In addition to the technical weaknesses in the internal management, the poor coordination with other prevention actors and the lack of global evaluation assessing the real added value to the public health challenges represent an important risk of inefficiency.²⁶

Until now, the projects funded by the FPAM have been evaluated on an individual case-by-case basis using rough performance indicators to guarantee “at least” feedback on each initiative's immediate outcomes. However, this mechanism only allows limited perspective on their collective impact for the population. Yet, as the prevention challenges in French Polynesia are growing and resources are limited, it seems essential to adopt a broader vision. While this research does not aim at measuring the population's health impact directly, we chose the ecological evaluation framework, which provides a structured tool to assess the potential reach and strategic coherence of the FPAM-funded projects.

The ecological approach in prevention and health promotion initiatives

The ecological perspective in public health recognizes the complex interaction between the individuals and their social, economic and physical environments. McLeroy et al. conceptualized in 1988 a new ecological model for health promotion, framing it as a multilevel approach to understand, and to influence, health behaviours.²⁸ The five classes of factors (or levels) determining health-related behaviours are then the intrapersonal factors, interpersonal processes, organizational factors, community factors and public policies. This framework highlights the fact that prevention and health promotion interventions focusing solely on the individual behaviours are most likely to be insufficient,

as the environmental and social determinants of the targeted individuals play a crucial role in shaping their health outcomes.

Building on this model and integrating complementary principles of the Precede/proceed and MATCH model, Richard et al. (1996) further conceptualised the ecological model by creating an operational analytical grid that can be used for systematic classification of intervention strategies, according to the level(s) of influence they target.²⁹ It includes three dimensions, crucial to assess the ecological integration of prevention and health promotion projects : the setting of the intervention, the level of influence targeted and the strategies adopted.

Since then, this comprehensive framework has been widely applied to diverse public health research, especially in prevention and health promotion interventions. Besides, its use on community-based health promotion programs targeting physical activity or nutrition demonstrated its capacity to identify the strategic scope of these interventions and assess their coherence with prevention and health promotion best-practices.^{30,31}

Thus, evaluating the ecological approach of the projects funded by the FPAM will provide valuable insights on its potential contribution to supporting prevention and health promotion interventions mobilising multiple levels of influence and targeting determinants beyond individual behaviour.

Research questions and objectives

Despite the significant investments made by the FPAM in NCD prevention and health promotion since its creation in 2012, little is known on the influence this funding mechanism actually has on chronic disease prevention in French Polynesia. To date, no formal broad evaluation of how the FPAM is structured, what types of projects are supported, and whether they align with public health priorities and best practices in prevention. This thesis aims to address this gap by understanding the contribution of the FPAM to the implementation of non-communicable diseases prevention and health promotion strategies in French Polynesia.

The first objective is to provide an analysis of the FPAM-funded projects from 2017 to 2024, focusing on their strategic alignment and ecological scope. The secondary objectives are to describe the evolution of the funding program and the projects' characteristics over the studied period; to assess the change strategies adopted and program reach of funded projects using the ecological framework of Richard et al. (1996); and finally, to formulate recommendations for strengthening the strategic and ecological orientation of the FPAM funding program to better support NCD prevention.

METHODS

Context of the study

This research is a retrospective study on the use of the funding program *Fonds de Prévention Assurance Maladie* (FPAM) between 2017 and 2024. This prevention fund was created by the *Caisse de Prévoyance Sociale* (CPS) in 2012, at the Ministry of Health and Solidarity's request. Since then, the operating scheme has consisted in funding local prevention and health promotion initiatives through either annual call for proposals or spontaneous applications.

The objective of this fund, granted with an annual budget of 50 MF CFP (close to 420 000 €), is to support local actions addressing the root causes of preventable diseases in French Polynesia, and to ultimately reduce their burden on the healthcare system.

At the beginning of each year, the CPS launches their annual call for proposals called "*A Rohi no te Ora*" ("pathway to health" in Tahitian). It is open to French Polynesian associations, municipalities and private companies, and financially supports local health promotion and NCD prevention projects by co-funding their implementation in a one-year timeframe. The contribution is capped at 60% of total eligible expenditure. The projects are expected to respond to one or more of the three focus themes: local and healthy nutrition; active lifestyles and physical activities; or community health. In parallel, spontaneous applications were also accepted until 2022.

The choice of the evaluation period corresponds to the period during which the fund has been managed by the CPS's Occupational Risk Prevention service, still in charge today. The data prior to 2017 was incomplete or unavailable, and 2025 is excluded as the program was paused specifically for this evaluation.

Furthermore, it is important to note that data for the projects initiated in 2024 remain provisional. Indeed, the project leaders are allowed a one-month period post-year-end to submit their final activity and financial reports to the CPS. As of May 16, 2025, only nine out of the 22 projects have been formally closed and financially settled. The financial figures reported for 2024 in this analysis represent the actual expenditures for closed projects and the provisional amounts for those still pending final reporting.

To better understand the contribution of the FPAM to chronic disease prevention in French Polynesia during this period, this retrospective study combines quantitative and qualitative methods to analyse the characteristics, scope and strategic relevance of funded projects.

Data collection

The data required for this evaluation was collected from the internal CPS database, including FPAM management documents and individual files for all projects effectively implemented and funded, either through the annual call for proposal or spontaneous application. Each project was systematically examined through a comprehensive review of the following documentation: application files, funding agreements, moral and financial reports and archived communications with project carriers.

Considering the heterogeneity and dispersion of the information available for each project, it was necessary to adopt a triangulation method to reconstruct the projects' completion status. This involved cross-referencing the initial project descriptions at application, the approved scopes outlined in the funding agreements, and the actual deliverables reported at the end of the project. This long reconstruction process was critical to ensure the validity and reliability of the evaluation and resolve inconsistencies in the existing data. All information was gathered in French and translated in English.

Data from the 115 projects funded by the FPAM between 2017 and 2024 were gathered into a single database (Excel spreadsheet) including the following variables: year of project, type of project carrier, project title, project description, thematic axis, nature of the activities, geographical location, project duration, targeted age group, specific characteristics of the target population, projected total budget, amount requested from the CPS, actual total expenditure, actual amount funded by CPS, CPS funding proportion (%), evaluation criteria, funding category, and additional remarks. This database will be the foundation for following quantitative and qualitative data analysis.

Data analysis

The analysis for this study was conducted in two phases: first, a quantitative descriptive analysis of all projects funded by the FPAM between 2017 and 2024, followed by a qualitative evaluation of a selection of projects using the Richard et al. (1995) framework to assess their ecological approach.

Quantitative analysis

All 115 funded projects were examined to describe their key characteristics and identify trends over time. This analysis aimed to identify how the FPAM was operationalised over the years, what priorities were addressed and how the resources were distributed across the actors and territories. For this, descriptive statistics were produced to access trends in project funding and thematic coverage, by using Microsoft Excel. Whenever relevant, comparisons were made and graphics constructed.

Qualitative analysis

Then, a qualitative analysis was conducted on the projects funded in 2019 and in 2023 to assess their ecological approach.²⁹ For this qualitative analysis, we applied the analytical grid developed by Richard et al. in 1996, further described by Breton et al. in 2004³² to the projects funded by the FPAM in 2019 and in 2023. This framework uses a structured coding process created to best analyse the ecological approach of prevention or health promotion projects.

The data from the detailed descriptions of each 2019 and 2023 program gathered in the database created in the data collection process, were systematically coded. The coding process was based on the three dimensions of the Richard et al. framework: the setting, the targeted level of influence, and the intervention strategy.

In this context of ecological approaches to prevention and health promotion, the setting refers to the physical or social environment where the interventions are implemented (where the beneficiaries of the intervention are reached): organization, community, society, or supranational system.²⁹ They are coded "ORG", "COM", "SOC" and "POL". The targets represent the specific level of influence targeted by the intervention, including the individual directly, their interpersonal networks, the organizations or communities they belong to, or policy environments.³² They are coded as "IND", "INT", "ORG", "COM" or "POL". Finally, the strategy encompasses the specific actions or mechanisms used to influence the health behaviours or determinants within these settings and targets. They can be educational activities, environmental modifications, policy advocacy, or organizational change, and will be classified using a specific coding presented in Table 6 (APPENDICES).

Each project could involve multiple settings, levels of influence and strategies. When the components of one project were not explicitly identifiable, a double verification was conducted by a second encoder. This codification process allowed us to systematically evaluate the ecological scope of each intervention, thus determining whether it addressed multiple levels and determinants or remained limited to individual-level behaviour change.

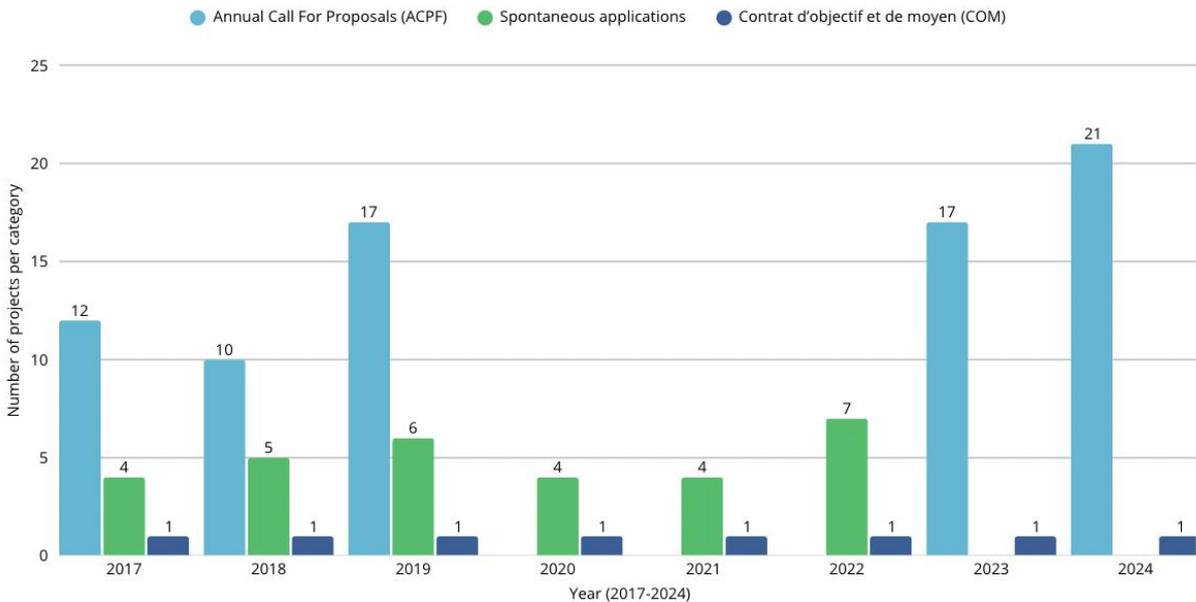
This study is the first one evaluating NCD prevention efforts in French Polynesia, where there is a notable lack of evaluation culture, and documentations in public health research on French Polynesia. However, this study has limitations that have to be acknowledged, the first one being that the data collection is primarily based on the self-reported project documentations. The reliance on the project leader's final financial and moral reports could be a bias for the reported outcomes and underreport implementation challenges. Besides, there is a selection bias, as the qualitative ecological analysis was focused on limited years, which could potentially miss trends and not capture the FPAM's projects evolution over the entire study period.

RESULTS

Quantitative descriptive analysis

Between 2017 and 2024, the *Fonds de Prévention Assurance Maladie* (FPAM) funded a total of 115 prevention and health promotion projects tackling NCD risk factors in French Polynesia, with a total provisional amount of 210.2 million F CFP ($\approx 1\,700\,000$ €). This quantitative analysis characterises the main trends in project numbers, thematic priorities and territorial distribution across this eight-year period, to better understand the scope of the projects funded by the FPAM. As shown in Figure 2, the temporal distribution of funding can be divided into three periods, marked by the COVID-19 pandemic.

Figure 2 Annual number of projects funded by the FPAM between 2017 and 2024



From 2017 to 2019 the FPAM operated through spontaneous applications and annual call for proposals (ACFP). The COVID-19 pandemic then led to the temporary pause of the ACFP in 2020-2022. Only a limited number of spontaneous applications were still accepted for projects that could effectively be implemented. In 2023-2024, the ACFP was re-launched, and spontaneous application were no longer accepted, following criticism from the CTC as they advantaged well-informed applicants and created “a gap in equal access to the fund”.²² They indeed represented a considerable part of the funding (51% in 2018 and 46% in 2019). However, the project classified as a *Contrat d'objectif et de moyen* (COM)^a kept on being funded, as the convention was signed for multiple years (until 2025). It funds 40% of

^a Pluriannual contract under which a medico-social establishment makes a commitment over a multi-year period to receive budget allocations based on the activity objectives pursued by the establishment.

the SOS Suicide association activities, main actor in mental health and suicide prevention in French Polynesia.

Projects included in the study period had a mean duration of 6.75 months, with 46% being conducted over a period of 6 months. Only 14% of the projects (n=16) were reconducted over a one-year period, whether it was continuously or not. These projects were mostly territorial-wide projects accounting for bigger budgets and applying through spontaneous applications. But an exception is for example, the Mahina Boarding Highschool which first installed sports equipment in 2018, then implemented regular sports sessions during the class year in 2019 and 2021.

Most projects targeted adults (30%), followed by all age groups (28%), adolescents (22%), children (13%) and elderly (7%). Total budgets varied a lot. While the mean budget was 4.6 million F CFP ($\approx 33\,540\text{ €}$), close to 48% were “micro-projects” with a budget under 2 million F CFP ($\approx 16\,800\text{ €}$), 25% over 6 million F CFP ($\approx 50\,000\text{ €}$) and 26% between 2 and 6 million F CFP.

Table 1: Number and funding trends for the projects funded by the FPAM between 2017 and 2024

<i>Projects</i>	<i>N</i>	<i>%</i>	<i>Amounts (F CFP)</i>	<i>%</i>
<u>Targeted themes</u>				
<i>Physical activity (PA)</i>	44	38%	73 250 137	35%
<i>Healthy diet (HD)</i>	19	17%	18 551 261	9%
<i>Community health (CH)</i>	15	13%	51 477 280	24%
<i>Mixt (PA and/or HD and/or CH)</i>	37	32%	66 906 899	32%
<u>Types of project leaders</u>				
<i>Association</i>	53	46%	92 123 877	44%
<i>Municipality</i>	30	26%	41 504 461	20%
<i>Company</i>	26	23%	72 253 139	34%
<i>Natural person</i>	6	5%	4 304 100	2%
<u>Geographic repartition</u>				
<i>Windward Islands</i>	63	55%	86 845 950	41%
<i>Leeward Islands</i>	8	7%	10 938 982	5%
<i>Tuamotu-Gambier Islands</i>	13	11%	18 755 984	9%
<i>Austral Islands</i>	2	0.2%	4 868 100	2%
<i>Marquesas Islands</i>	2	0.1%	1 502 641	1%
<i>Entire territory</i>	27	23%	87 279 920	42%
<u>Funding application</u>				
<i>Annual call for proposal (ACPF)</i>	77	67%	96 975 715	46%
<i>Spontaneous applications (SA)</i>	30	26%	78 733 862	37%
<i>Contrat d’Objectif et de Moyen (COM)</i>	8	7%	34 500 000	16%
Total	115		210 185 577	

Overall, FPAM funded projects primarily promoted physical activity (38%) or a combination of physical activity, healthy diet and/or community health (32%), as shown in Table 1. The projects categorised in the community health theme responded to “empowering people to take responsibility for their own health”³³ and included suicide prevention, therapeutic education or audio-visual sensibilisation productions on drug addiction, mental health and social concerns in French Polynesia.

Associations led nearly half (46%) of all projects, clearly outnumbering municipalities (26%) and companies (23%), which confirms their central role in community engagement. They received 44% of the total funding, and include sports association (n=22), followed by social support (n=8), health (n=7), education (n= 5) and culture (n=2) associations. The diversity of project leaders reflects on a broad community engagement across different sectors, but it is important to highlight that most project leaders did not have formal training in the public health field.

Regarding the geographic distribution, more than half of the projects were implemented in the Windward Islands, where approximately 75% of the population lives. Then, 23% of the total funding supported projects with territorial reach. These were exclusively spontaneous applications until 2022, for territorial-wide sports challenges amongst students or inter-company competitions, then shifted to audio-visual productions aimed at the whole French Polynesian population. The Tuamotu-Gambier, Austral and Marquesas archipelagos, isolated from the capital island Tahiti, only accounted for 17 projects, but we can see an encouraging progression as they represented 33% of the projects in 2024.

Finally, Table 1 shows how the distribution of funding varies by application type. Though spontaneous applications made up for 26% of projects, they represented a disproportionately higher share of the funding. The COM (*Contrat d’Objectifs et de Moyens*), funding the SOS Suicide activities, received increasing support from 3 million F CFP in 2017 to 6 million F CFP in 2024.

Table 2 depicts the diversity of activity types carried out by the 115 FPAM funded projects, adding up to a total of 171 activities, as most of the projects planned multiple activities. The variety reflects on the fund’s openness to a broad range of prevention strategies adopted by project leaders. The supervised sports sessions clearly stand out, appearing in 52 projects (nearly half of the projects). They included regular group-based physical activities such as fitness, walking, *ori Tahiti* (dance), cross fit, and *va’a* (Polynesian pirogue competition), as well as inter-company competitions, community-based swimming programs, and health promotion events combining physical activity with dietary follow-ups. Mostly led by associations and companies, these projects highlight the FPAM’s strong focus on physical activity promotion through direct behaviour change interventions.

Table 2: Types of activities conducted by FPAM funded projects between 2017 and 2024

<i>Type of activities</i>	<i>N</i>
<u>Education and awareness activities</u>	
<i>Cooking workshops</i>	22
<i>Therapeutic education</i>	5
<i>Audio-visual materials</i>	8
<i>Theatre</i>	4
<u>Physical and Sports activities</u>	
<i>Supervised sport sessions</i>	52
<u>Space planning</u>	
<i>Installation of sports equipment</i>	23
<i>Installation of cooking equipment</i>	2
<i>Installation of gardening equipment</i>	6
<u>Events and community mobilization</u>	
<i>Festival</i>	4
<i>General public event</i>	33
<u>Support and mental health assistance</u>	
<i>Smoking cessation</i>	1
<i>Suicide prevention</i>	8
<u>Capacity building for stakeholders</u>	
<i>Training for professionals or volunteers</i>	3
Total	171

Note: given that one project may include several activities, the total frequency can exceed the number of projects

The educational and awareness activities formed the second most common cluster, gathering cooking workshops, therapeutic education, audio-visual material production or theatre representations. These activities are designed to increase the individual knowledge or health competencies, but very often lacked parallel structural or environmental changes, essential to support sustained behaviour change for the targeted population. On the other hand, a small share of the projects involved material investments, like the installation of outdoor fitness equipment, gardening spaces, or kitchen equipment, which contributes to building supportive environments. Some initiatives featured large-scale events or stakeholder training sessions aiming at acting on the community's engagement and strengthen local capacity, even though these efforts remained sporadic.

Finally, these first results reveal that the FPAM has supported a very wide range of short-term prevention and health promotion projects during the eight-year period. They focused on promoting physical activity and healthier diets to address behavioural risk factors related to NCDs such as obesity. They were mostly led by associations and companies, without formal trainings in public health, which be a limit to long-term efficiency and sustainability. The question remains on determining whether this funding mechanism is relevant to tackle public health challenges in French Polynesia and whether it can effectively induce behavioural and environmental changes for the population.

Qualitative findings

Across the 115 projects funded by the *Fonds de Prévention Assurance Maladie* in the eight-year period studied here, the projects from the years 2019 and 2023 were selected for an in-depth analysis of the strategies adopted using the ecological model, conceptualised in 1996 by Richard et al. These two years were selected to provide both a picture of the reach of the projects for one year, and the evolution between the periods before and after the COVID-19 pandemic.

The intervention settings

Table 3 : Frequency distribution of programming components according to the different types of intervention settings for the 18 projects financed by the FPAM in 2023

Intervention setting	Frequency	
	2019 (n=24 projects)	2023 (n=18 projects)
ORG – School	3	8
ORG – Company	5	2
ORG – Association	5	3
ORG – Health	0	1
ORG – Others	3	0
COM	11	6
SOC	0	2

Two types of settings were present in the 2019 and 2023 samples studied: the interventions happened either within organisations like schools or companies, or in the community. Interestingly, none of the projects targeted the society or supranational settings. Regarding the number of settings targeted by one project, one-setting interventions were by far the most frequent. In 2019, 88% of the interventions (n=21) were limited to one setting, and only 12% (n=3) combined the settings of an organization and a community. In 2023, the proportion of projects using a unique setting is 83% (n=15), while two projects combined two settings, and one combined 3 settings. Table 3 shows detailed information on the settings included in the samples. Organisations accounted for 67% (n=16) of the projects in 2019 and 63% (n=12) in 2023. The two projects executed in a societal setting were interventions aimed at reaching the entire populations via audio-visual mass communication on television or social media.

Levels of influence

Table 4: Frequency distribution of programming components according to the different types of targets for the 18 projects financed by the FPAM in 2019 and in 2023

Level of influence targeted	Code	Frequency	
		2019 (n=24 projects)	2023 (n=18 projects)
The individual as a direct target	P→IND	15	12
An interpersonal target	P→INT	2	1
An organizational target	P→ORG	4	5
A community target	P→COM	8	4
A political target	P→POL	0	0

Note: given that one project may include several targets, the total frequency may exceed the number of projects

The frequency of the five levels of influence targeted by the projects implemented in 2019 and 2023 is presented in Table 3. The target most frequently identified is the individual as a direct target (IND) in both samples, 62% in 2019 and 67% in 2023, revealing a clear emphasis on targeting direct modification of individual behaviours.

The organizations (ORG) or community (COM) to which the individual belongs were the following most targeted levels of influence in behavioural change by the projects. The persons in the interpersonal environment of the individual (INT) were used only in 2 projects in 2019 and 1 in 2023.

None of the projects explored the political environment as a target, which highlights the global predominance of individual behaviour change strategies adopted by the funded projects, with limited engagement in higher ecological levels (organisation, community and policy).

[Intervention strategies](#)

Table 5: Frequency distribution of programming components according to the different types of intervention strategies for projects financed by the FPAM in 2023

Types of strategies	Frequency	
	2019 (n=24 projects)	2023 (n=18 projects)
P → IND	15	12
P → [IND-IND] → IND	7	1
P → INT	2	1
P → [INT-INT] → IND	0	0
P → ORG → IND	4	5
P → [ORG-ORG] → IND	3	0
P → COM → IND	8	2
P → POL → IND	0	0

Note: given that a single project may include several targets, the total frequency may exceed the number of projects

Table 5 presents the frequency of the various strategies adopted in the projects funded in 2019 and 2023 by the FPAM, using the codification of the ecological framework by Richard et al. (1996), detailed in Table 6 (APPENDICES).

Table 5 reveals a strong predominance of actions directly targeting individuals (P → IND), accounting for 15 in 2019 and 12 in 2023. Other strategies, targeting the interpersonal influence (P → [IND-IND] → IND and P → INT), organizational change (P → ORG → IND, P → [ORG-ORG] → IND), and community-level approaches (P → COM → IND) were less frequent. Notably, in 2023, only one project used an interpersonal strategy, and two used a community approach, while no projects targeted policy-level change (P → POL → IND).

Finally, the tendency for adopting mostly individual approaches in the prevention and health promotion projects studied here results in a limited ecological scope in the two samples: most of the interventions focused on individual behaviour change, with only few projects mobilizing other levels of influences. While there was a small increase in organizational strategies from 2019 to 2023, the diversity of approaches remains low. This suggests that, despite the recognized importance in the literature of adopting multi-level interventions, the projects funded by the FPAM continue to be focused on the individual level.

DISCUSSION

The findings of this research provide interesting insights on the orientations and limitations of the *Fonds de Prévention Assurance Maladie* as a prevention fund mechanism in French Polynesia. While it has financially supported a particularly wide range of projects and actors to engage in NCD prevention and health promotion across the population, the analysis reveals a strong predominance of interventions focused only on individual behaviour change. Most projects promoted physical activity or physical activity combined with healthy diets on the individual level, with only few addressing organizational, community, or policy-level determinants. This is consistent with previous research showing that, despite growing recognition of the importance of multi-level strategies, the complexity of addressing environmental NCD risk factors lead to prevention programs continuing to prioritize individual-level interventions.³¹

The ecological approach, conceptualized by McLeroy et al. in 1988, operationalized by Richard et al. in 1996, and further described by Breton et al. in 2004, demonstrates the need for interventions that address multiple levels of influence: ranging from targeting the individual themselves to their interpersonal network, and their organizational, community, and policy environments. Since then, its application on prevention and health promotion interventions across the world in very diverse contexts, has nourished the fact that multi-level strategies on one population, integrating organisational and policy changes, were more likely to reach a sustainable impact on the health behaviours and health outcomes of the same population. For example, a recent systematic review demonstrated that multi-level interventions based on the socio-ecological model, targeting four levels simultaneously, tend to be more effective in reducing sedentary time in children than interventions focusing on fewer levels.³⁴ In Australia, Aboriginal and Torres Strait Islander health programs that integrated changes to food supply, infrastructure, and local policies within a community, alongside change strategies targeting individual behaviours, were stronger to foster effective long-term improvements in community health.³⁵

However, the result of this study shows that the projects funded by the FPAM in the 2019 and 2023 samples remain largely focused on the individual level, with only sporadic examples of organizational and community-level interventions, and none targeting policy change. This is concerning given the NCD public health emergency in French Polynesia, and the large evidence proving that individual-focused interventions alone are not sufficient to address the complex drivers of NCDs.³⁶ For instance, a recent global study suggests that if the prevalence of physical inactivity remains the same, 500 million new cases of preventable NCDs would occur by 2030, disproportionately affecting low- and middle-income countries (LMICs), with an estimated global cost exceeding 500 billion dollar.⁵

The limited ecological scope seen in the FPAM funded projects between 2017 and 2024 reflect broader challenges to the fight against the global NCD prevalence rise in terms of orientation, implementation and evaluations of such prevention funding programs. It is indeed still common for public health programs to struggle in operationalizing the ecological model into practice, and it is even more difficult in the context of this prevention fund, where the managers of the fund and most project operators have no formal public health training.

The range of activities executed in the FPAM funded projects and reported in Table 2 still aligns with international recommendations. For instance, the physical activity activities, whether they are the ones implemented by companies for workers during their work time, the territorial-wide sports challenges amongst students or inter-company competitions, they respond align with the WHO Global Action Plan on Physical Activity 2018–2030 guideline to “create active societies”.³⁷ However, the FPAM projects do not comprehensively respond to the Toronto Charter’s call for multi-level, multi-sectoral, policy, and environment-focused action to create active societies.³⁸

In summary, the results of this evaluation are consistent with the international literature, which stresses the limitations of individual-focused interventions and the necessity for adopting multi-level strategies for effective and sustainable NCD prevention. Addressing these gaps in the FPAM’s funding strategy could enhance its actual contribution to public health in French Polynesia and serve as a model for other prevention funding mechanisms in similar contexts.

Conclusion

Finally, while the FPAM plays a valuable role in supporting community engagement in NCD prevention and health promotion interventions across the French Polynesian population, the findings of this study highlight the need for a strategic change towards more integrated, multi-level interventions. Yet, it is essential to recognize that, as a funding mechanism managed by an institution whose core mission is not prevention, its role is necessarily limited within the broad landscape of public health strategies in French Polynesia. The FPAM alone cannot deliver a comprehensive response to all NCD risk factors or serve as the main solution to this public health emergency. Nevertheless, its existence and contribution are valuable, and it should be considered as a complementary tool that supports and accompanies broader public strategies for prevention and health promotion across the territory.

New strategic orientations could be considered to maximize the potential effectiveness of the FPAM and its alignment with national prevention priorities. First by redefining the FPAM’s role as a strategic tool within a coordinated, multi-sectoral approach. The scope of the projects or themes covered by

the FPAM could be narrowed and focused on specific priorities that are in line with the territorial prevention and health promotion priorities, but also complementary to the roles and actions of other key actors in prevention. Rather than dispersing efforts across a very wide range of themes and projects, knowing that the internal resources are limited, the FPAM could concentrate its focus on targeted themes, for example, ideally addressing gaps not covered by other public health programs, thereby reinforcing its added value within the overall prevention strategy for French Polynesia. The FPAM could also shift its focus on reaching underserved and remote populations, addressing health disparities across all archipelagos. In this sense, the coordination between the FPAM and the other public health actors could also be explored in the future to ensure coherence and synergy in prevention efforts.

Secondly, the selection criterias should include the notion of multi-level interventions on the target population, by prioritising projects that integrate individual, organizational, community, and policy-level strategies, in line with the ecological approach to health promotion and international best practices. This could be achieved by providing technical support and capacity building for project leaders and strengthening the coordination with other prevention stakeholders.

Finally, this research represents a significant first step, not only in determining the past contribution of the FPAM managed by the CPS to prevention efforts in French Polynesia, but also in bringing to light a critical issue regarding the strategic orientations of prevention in the territory and their coordination with the operational stakeholders. This question is currently being further explored through interviews with key institutional actors, which aim to deepen the understanding of how prevention strategies are defined, implemented, and coordinated in practice. Further relevant research could explore the role of social protection actors like the *Caisse de Prévoyance Sociale* in chronic disease prevention, or the long-term impact of FPAM-funded projects on population health outcomes, and comparative studies with other prevention funding mechanisms, could help identify best practices and innovative approaches adaptable to the Polynesian context.

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APPENDICES

Figure 3 Evolution of the number of cases for the five most prevalent diseases in French Polynesia between 2010 and 2023 (source: 2023 CPS report) ¹⁶

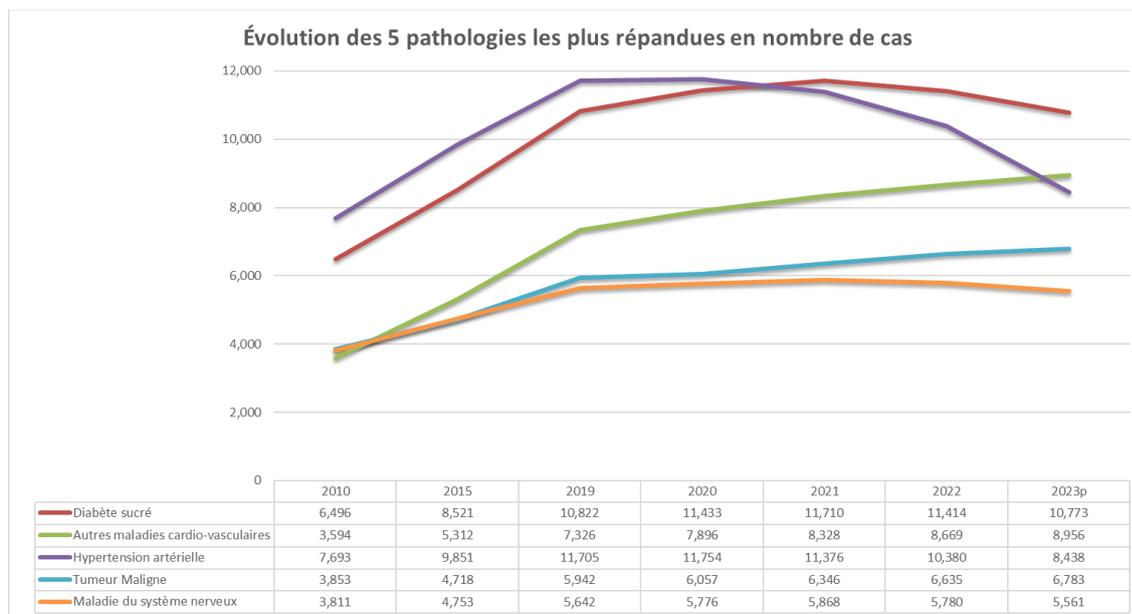


Table 6 Descriptions and examples of possible intervention strategies described by Richard et al. in 1996.²⁹

Descriptions and Examples of Possible Intervention Strategies

Target*	Strategy	Description	Example
Client	Program → client HP → IND	Programs aimed at building clients' competencies, knowledge, beliefs, attitudes and values	A substance-abuse program aimed at building peer pressure resistance among adolescents ⁴⁷
	Program → [client - client] HP → [IND - IND]	Establishment of relationships between clients in order to have them share ways to restore or promote their own health	Mutual-aid groups to assist each other in preventing violence or injuries ⁴⁸
Interpersonal	Program → interpersonal → client HP → INT → IND	Programs aimed at modifying the clients' interpersonal environment	Nutrition education sessions offered to women with the objective of changing their family's eating habits ⁴⁹
	Program → [interpersonal-interpersonal] → client HP → [INT - INT] → IND	Establishment of relationships between members of the clients' interpersonal environment in order to have them share ways to restore or promote clients' health	Self-help groups gathering parents wishing to prevent smoking among their kids ⁵⁰
Organizational	Program → organizational → client HP → ORG → IND	<ol style="list-style-type: none"> 1. Organizational change programs aiming to modify health-compromising aspects of an organization 2. Training programs which objectives are to increase health promotion relevant competencies of important actors in organizations 3. Creation of a new organization 	<ol style="list-style-type: none"> 1. Provision of physical activity facilities or non-smoking work areas; modification of work schedule to allow participation in health-promoting activities⁵¹ 2. A training program aimed at improving physician's smoking intervention skills^{52,53} 3. The creation of a national organization for the prevention of drinking and driving⁵⁴
	Program → [organizational-organizational] → client HP → [ORG - ORG] → IND	Establishment of relationships between organizations devoted to or interested in a specific health issue	Community coalitions ⁵⁵
Community	Program → community → client HP → COM → IND	Training programs which objectives are to increase health promotion relevant competencies of community's representatives	Training community health representatives in order to increase their community development skills [†]
	Program → [community-community] → client HP → [COM - COM] → IND	Establishment of relationships between communities in order to promote health	Healthy Cities/Communities Network ^{43,44}
Political	Program → political → client HP → POL → IND	Programs aimed at influencing political representatives in order to have them legislating on a health-related issue	Lobbying ⁵⁶
	Program → [political-political] → client HP → [POL - POL] → IND	Establishment of relationships between political representatives with the objective of improving health of a given targeted population	Intersectoral cooperation ¹⁴
Mixed	Program → organizational → political → client HP → ORG → POL → IND	Programs aimed at convincing organizations to do health-related lobbying	A sensitization program aimed at convincing public health professionals to lobby elected officials ^b

*IND: clients
INT: other individuals and small groups of individuals forming the interpersonal environment
ORG: organizations
COM: communities
POL: political systems

† Example drawn from our sample of programs

ABSTRACT IN FRENCH

Titre : « Evaluation de la contribution du fonds de prévention de la Caisse de Prévoyance Sociale à la prévention des maladies non transmissibles en Polynésie française : une approche écologique »

Contexte : La lutte contre la progression persistante des maladies non transmissibles (MNT) est un enjeu majeur de santé publique en Polynésie française, où la prévalence de l'obésité et des pathologies chroniques associées est l'une des plus élevées au monde. Malgré des investissements importants dans la prévention, la contribution réelle et la portée en termes de santé publique des mécanismes de financement locaux tels que le Fonds de Prévention Assurance Maladie (FPAM) dirigé par la Caisse de Prévoyance Sociale (CPS) sont peu connues. L'approche écologique évalue la manière dont les interventions agissent sur plusieurs niveaux d'influence, y compris les environnements individuels, organisationnels, communautaires et politiques.

Question de recherche : Dans quelle mesure les projets locaux de prévention des maladies non transmissibles financés par la FPAM s'alignent-ils sur les priorités de santé publique et intègrent-ils une approche écologique ?

Méthodes : Il s'agit d'une étude rétrospective sur les projets financés par le FPAM entre 2017 et 2024. L'analyse quantitative a décrit la distribution, les thèmes et la portée de la population des projets financés par la FPAM pour cette période. Ensuite, une analyse qualitative a été menée sur deux échantillons 2019 et 2023, en appliquant le cadre écologique pour identifier les niveaux d'influences ciblés par les projets et leurs stratégies d'intervention adoptées.

Résultats : Le FPAM a financé un total de 115 projets entre 2017 et 2024, avec un investissement total atteignant environ 1 700 000€. Les projets se sont davantage concentrés sur la promotion de l'activité physique, avec des expositions moyennes de 6,75 mois. Le cadre écologique a révélé que la plupart des projets ciblaient directement le changement de comportement individuel, tandis que seule une petite partie abordait les déterminants organisationnels, communautaires ou politiques avec des stratégies multi-niveaux ou structurelles.

Conclusion : Bien que le FPAM ait contribué à la mise en œuvre d'un large éventail d'initiatives de prévention, conformément aux priorités locales en matière de santé publique, celles-ci sont restées largement axées sur des interventions au niveau individuel. Il est essentiel d'étendre son soutien aux projets qui abordent plusieurs niveaux d'influence afin d'améliorer l'efficacité et la durabilité de la prévention des maladies non transmissibles en Polynésie française.

Mots-clés : Maladies non transmissibles ; financement de la prévention ; approche écologique ; promotion de la santé ; Polynésie française