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List of acronyms

CNMI	Commonwealth of Northern Mariana Islands
IFAD	International Fund for Agricultural Development
FAO	Food and Agriculture Organization of the United Nations
FSM	Federated States of Micronesia
GCNF	Global Child Nutrition Foundation
PNG	Papua New Guinea
RMI	Republic of Marshall Islands
SMC	School Meals Coalition
SMP	School Meals Program
SPC	The Pacific Community
SPF	School Food Provision
SRA	Small Research Activity
WFP	World Food Programme

2 Executive summary

School meals programs based on home-grown models can serve as platforms for food system transformation, while simultaneously improving the quality of education. Locally grown and procured food is a nutritious, healthy, and efficient way to provide schoolchildren with a daily meal while improving opportunities for smallholder farmers and support local rural economies (WFP et al., 2018). Despite the significant global development of home-grown school feeding approaches linking to local producers and aimed at improving farmer livelihoods and other related job creation, there has been very little attention on these models in the Pacific region or indeed on school feeding programmes in the region generally.

The aim of this small research activity (SRA) was to provide an understanding of the current extent and status of school food provision and environments in Pacific Islands countries, with a focus on documenting the enabling policy environment, institutional and farmer capacity to better support the integration of local agriculture into school food provision. Simultaneously, the SRA sought to establish partnerships to seek understanding and consensus on country contexts that offer optimal conditions for connecting agriculture to school food provision, creating opportunities for future research.

The term 'school food provision' (SFP) in the SRA has been used to collectively refer to the various ways of providing food to students, including the provision of healthy food in school meals (school feeding), in canteens/tuckshops, school gardens, and by working with market vendors that sell to students on or near school grounds.

This SRA included 4 objectives:

1. To understand the current state of local agriculture into school food provision in the Pacific Islands region.
2. To understand the current policy landscape and enabling environment for integration of local agriculture into school food provision.
3. To identify the best-bet sustainable options for integrating local agriculture in school food provision and recommendations for future action.
4. To build awareness and consensus around the multiple benefits of integrating local agriculture in school food provision and identify partnerships for collective action on key next steps.

The research questions were answered using a range of methods, including a systematic literature review, key informant interviews (KII), online surveys, systematically searching for and collating policy documentation, identifying and collating secondary data from relevant databases, and a virtual regional consultation workshop.

The systematic literature search and KIIs associated with objectives 1 and 2 have resulted in the identification of a range of activities, varying in scope and design. The initial systematic literature review identified 12 literature sources that referenced a school food provision activity or program. Seven of these sources specified details of activities on school feeding programs, four referenced school gardens, four referenced school canteens and three referenced school curricula related to school food provision.

Within KII, respondents provided information on behalf of 15 PICTs (Cook Islands, Commonwealth of Northern Mariana Islands [CNMI], Federated States of Micronesia [FSM], Fiji, French Polynesia, Republic of Marshall Islands [RMI], Nauru, New Caledonia, Samoa, Solomon Islands, Timor-Leste, Tonga, Papua New Guinea [PNG], Vanuatu, and Wallis and Futuna). Two main typologies of school food provision (SFP) programs were identified: school feeding, and school gardens with other, less common types of initiatives categorised as 'other'. 'Other' initiatives were standalone projects, for example, a capacity needs assessment, nutrition education, or were activities linked to schools but not as direct food provision.

Twenty-two school feeding programs were identified. Eight of the school feeding programs identified a requirement to use local foods, and while they did not have a requirement to do so, two additional programs also reported sourcing local foods. Of the 7 programs where information was available for contract arrangements with farmers, 6 utilised informal agreements (although 1 noted it would move to formal in the future) and 1 was a formal agreement. Eight programs used nutrition guidelines.

Eleven school garden programs were identified. The main use of school gardens was 1. agriculture education, 2. consumption, and 3. generate income. Four of the school garden programs used produce to supplement school feeding programs on varying scales. The others distributed the yields of the gardens to students in different mechanisms, including produce either given to students, teachers, or families to take home, and/or used in cooking classes.

Goals across all programs were similar in that they often referred to enhanced educational outcomes, promoting healthy consumption behaviours, providing food security, connecting younger generations with culture, traditional and local foods and food practices, promoting local livelihoods and promoting agriculture.

The policy environment is similar, in that this varies by country. School feeding policies were identified for 8 school feeding programs (FSM n= 2, Fiji n= 1, French Polynesia n= 1, New Caledonia n= 1, RMI n= 2, and Timor-Leste n= 1). Many of the national policy documents identified in the deep-dive policy review outline general nutrition issues in each country, with strategies, goals or recommendations outlined to combat malnutrition. Most of the reviewed policy documents had incorporated nutrition issues in school aged children but have not necessarily outlined strategies, goals or recommendations to be acknowledged or acted upon by schools.

Information generated in objective 1 and 2 activities was collated in a database, essentially generating an inventory of the current school food provision models in the Pacific. The database is now publicly available and is published on the Pacific School Food Network (PSFN) [website](#).

Based on the results from objective 1 and 2 activities, the SRA team selected a sub-set of countries for the 'deep-dive' and to be the focus of objective 3. Selection was based on the criteria of prevalence of initiatives, stakeholder engagement and willingness to be involved, and geographical context. This sub-set included Fiji, FSM, New Caledonia, RMI, Timor-Leste, and Vanuatu.

Objective 3 utilised KIIs, an online survey, collating secondary data and a virtual workshop to discuss models and entry points. In total 13 people took part in interviews, 1 person completed the online survey, while 20 attended the virtual workshop. Most interview

participants reported that a 'farm to school' (i.e., homegrown) model was feasible, but that formal contracts would be required. Suggestions for what would be needed to make this successful included strong partnerships, funding, scale/stability of local value chains, and alternative markets for farmers when schools were not open.

One of the key questions asked in the regional consultation workshop was '*what is the most feasible model for your context and why?*'. A model based predominately, or completely on local foods was reported as ideal, but not realistic now, or for new programs. The unrealistic nature was attributed to the unavailability and lack of reliable value chains for local food supply. Many respondents pointed out the absence or inadequacy of policy environments to support these programs, not just nationally, but even on a smaller scale.

A hybrid model (part locally produced food, part imported food) was suggested as being most appropriate, and a good starting point for school meals programs. The hybrid model was viewed as more likely to be successful, with an aim of moving towards integration of a higher percentage of locally produced foods over time. Respondents discussed the need for involvement from many government sectors, such as education, health and agriculture, as well as the private sector, to make programs successful and sustainable.

Interview respondents also highlighted the importance of contextualised models that are community led and that take a food systems-based approach. Respondents identified early entry points as rural schools (particularly boarding schools), private/faith-based schools, and that champions and leaders are needed from all sectors. Challenges were perceived to be linked to finance, availability of items (both low availability of foods to include and high availability of highly processed foods), and children's taste preferences. Links to school curriculum and opportunities to integrate both basic agriculture skills as well as nutrition education were also raised, highlighting the need for a 'whole of school' approach.

Our understanding of the research problem has evolved over the course of the project. While it was anticipated that there would be complexity in school food activities when work began, this complexity has exceeded our expectations. This is not a problem per se but has required the team to spend more time on some aspects of the project than anticipated, such as verifying information or seeking contact details for key stakeholders.

Involving stakeholders from across the food system has provided rich data but has also presented challenges in ensuring that complete information for each school feeding activity has been documented. Generally, a specific stakeholder could provide detail around their specific role or component of the school food activity, but not that of others. Often when it was not possible to schedule interviews with key initiative leaders, requests to schedule an interview with a colleague went unanswered.

Completing interviews virtually over zoom has enabled engagement with a diverse range of stakeholders across countries. However, in some cases remote engagement has made it challenging to identify key stakeholders, or even be able to formally document case studies. As such, triangulation of information was important in this project. There were attempts to cross check information with other stakeholders to do this, but also a reliance on knowledge about existing initiatives from team members. Despite our best efforts to engage with stakeholders in some countries, we were not able to engage with them virtually, even when we were aware of activities. Engaging with farmers and other value chain actors related to school food procurement was particularly difficult given the reliance on virtual consultations.

The final objective related to identifying and developing key partnerships for potential future research. Through interviews, the team has built new connections and strengthened existing ones, particularly with stakeholders from Fiji, FSM, New Caledonia, RMI, Vanuatu, and Timor-Leste, who have shown great enthusiasm in participating. Several opportunities for collaboration have also been identified with the CGIAR, Global Child Nutrition Foundation (GCNF), The Pacific Community (SPC) and IFAD. The final virtual workshop is planned for mid-April 2024, providing an opportunity for case studies to be shared and other partnerships to be discussed.

The project team consisted of a committed group of individuals from The Alliance of Bioversity International and CIAT, SPC, ACIAR and DFAT, and the University of the Sunshine Coast (UniSC). For all, this was the first collaboration between The Alliance, SPC, ACIAR/DFAT and UniSC, and it has been a successful experience. Each partner, and team member has provided a unique and valued perspective and input, and specifically brought complementary and critical skills and capacity to the research team that is needed for a food systems-based approach to the home-grown school feeding. The team was able to bring expertise from agriculture, policy, nutrition, school-based interventions, and nutrition education. Engagement through UniSC has also allowed for the mentoring and capacity building of two PhD candidates through this work.

Team members also leveraged their wide range of regional and global networks, such as the School Meals Coalition and GCNF, many of whom have shown positive interest in this research results and significance for furthering the school food agenda in the Pacific Region. In addition, the combination of key informant interviews and the virtual consultation workshop provided an opportunity to identify potential in-country partners in various Pacific countries that are actively engaged and willing to further school food provision initiatives in their respective countries. Many of these are government department representatives, but also from universities and NGOs. This approach has helped strengthen working partnerships and provides a solid foundation for future project partnerships, as outlined in the project recommendations.

3 Background

School meal programs (SMP) based on home-grown models can serve as platforms for food system transformation, while simultaneously improving the quality of education. Locally grown and procured food is a nutritious, healthy, and efficient way to provide schoolchildren with a daily meal while improving opportunities for smallholder farmers (WFP et al., 2018). Despite the significant global movement around home-grown school feeding (HGSF) approaches linked to local producers and aimed at improving farmer livelihoods and other related job creation, there has been very little attention on these models in the Pacific region or indeed on provision of food in schools in general in the region. We urgently need new research to address knowledge gaps and barriers that are limiting wider uptake and implementation of such initiatives, and to understand the potential of linking food provision to local agricultural production in this region.

The aim of this small research activity (SRA) was to provide an understanding of the current extent and status of school food provision in Pacific Islands countries, with a focus on better understanding the enabling policy environment and, the institutional and farmer capacity to better support the integration of local agriculture into school food provision.

The term 'school food provision' (SFP) in the SRA has been used to collectively refer to the various ways of providing food to students, including the provision of healthy food in school meals, in canteens/tuckshops, school gardens, and by working with market vendors that sell to students on or near school grounds.

The SRA sought to identify contexts that provide the best conditions for future school food provision programmes linked to local agriculture to supply healthy, nutritious, and culturally appropriate local food in the Pacific. At the same time the SRA aimed to build partnerships and awareness among stakeholders of the multiple benefits of school food provision programmes that better link to local agriculture and sought to establish a common consensus on the future steps needed to implement action to strengthen linkages between local agriculture and schools in a small group of 'best bet' countries and the promotion of this approach in the Pacific region.

The SRA has successfully generated information that can assist with further research in the region to enable school food initiatives that not only nourish children but also effectively improve farmer production, increase value chain actor incomes, especially for women and youth, to work with farmer associations and public institutions to source underutilized, nutrient-rich foods. The evidence can also demonstrate how a local food procurement model can be further replicated and scaled up in the region.

3.1 The benefits of providing local foods in schools

An increasing number of countries are sourcing food for school meals locally from smallholder farmers in a home-grown school feeding (HGSF) approach. This approach aims to boost local agricultural development, strengthen local food systems, move people out of poverty and improve nutrition. School feeding models such as HGSF offer a unique springboard for realizing multiple benefits for children, the communities in which they live and countries. Globally, many governments have identified HGSF as a strategy to contribute to the achievement of the Sustainable Development Goals (SDGs) particularly end poverty (SDG 1), zero hunger (SDG 2) and good health and wellbeing (SDG 3), as well to facilitate inclusive and equitable quality education (SDG 4), the empowerment of

girls (SDG 5), decent work and economic growth (SDG 8), sustainable consumption and production (SDG 12) and shaping partnerships for sustainable development (SDG 17). However, the potential of well-designed and implemented HGSF programs goes well beyond these goals.

Over the past decade, there has been significant global progress on HGSF, with testing, consolidation, and expansion of different linkage models tailored to governments' needs and community characteristics. Home-grown models have successfully been established alongside the centralized program and are gradually scaling up in countries where school feeding programs have a centralized supply chain and management structure. In countries where school feeding programs are already decentralized and managed mainly by local authorities, schools, and communities, they are increasingly including smallholder and subsistence producers as suppliers. In other instances, progress has been slower because of various obstacles, including strict legal frameworks concerning food quality and safety issues, mismanagement, or inadequate capacity within local value chains.

School meals programs based on home-grown models can serve as platforms for food system transformation, while simultaneously improving the quality of education. Locally grown and procured food is a nutritious, healthy, and efficient way to provide schoolchildren with a daily meal while improving opportunities for smallholder farmers (WFP et al., 2018). Local catering businesses, many led by women, and other SMEs, can take advantage of business opportunities. Focusing on locally adapted, indigenous foods can help conserve food culture, protect biodiversity and strengthen climate resilience. Home-grown models also provide opportunities to teach children how to eat better while learning about sustainable lifestyles and healthy diets. They can serve as platforms, enabling a more holistic approach to child well-being through integrating education, health, and social protection. Well-nourished children are an important investment in the individual to learn, earn a living and contribute to society. In middle and low-income countries, every dollar invested in school meals yields nine dollars back in social returns: healthy and educated children are more productive adults (Verguet et al., 2020). However, the cost-benefit of the true cost of school meals, especially home-grown approaches, goes much beyond this (see recent [RF report](#)).

Just prior to the COVID-19 pandemic, school meals programs delivered more meals than ever before. The impact of the pandemic on the near universal closure of schools brought a sudden halt to this, leaving about 370 million schoolchildren without access to the one meal a day they could rely on. Re-establishing school meals programs has now become an urgent priority, including better preparedness for future shocks. In the lead up to the UN Food Systems Forum, stakeholders recognized and supported the potential of school meals for food system transformation in this context. They endorsed and launched a global School Meals Coalition in September 2021. Since children have returned to face-to-face learning, post COVID-19, there has been a further increase in meals provided to 418 million children, up from 388 million before the pandemic in early 2020 (WFP, 2022).

3.2 School food provision in the Pacific Islands

Despite the significant global development of home-grown school feeding types of approaches linking to local producers and aimed at improving farmer livelihoods and other related job creation there has been very little attention on these models in the Pacific region or indeed on school feeding programmes in the region generally. A recent scoping

review and capacity needs assessment of school food programmes in the Pacific (FAO, 2019a) found of the 14 countries surveyed, Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Republic of Marshall Islands (RMI), Nauru, Niue, Palau, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu, that school feeding programmes were used to varying extents in only four countries, namely Nauru, Palau, Republic of Marshall Islands and Tuvalu. The report did not mention any details on what types of food were procured, how the food was procured, or from whom. The FAO report did not include information on the potential of local farmers/producers in these or other countries to supply or supplement food for school feeding programmes, nor on the scale of demand from schools themselves. The report also found that the Pacific region has a high level of motivation and support for school food-related activities, but there are limited opportunities for upskilling, connecting, and collaborating.

The report found limited information showing policies that direct the procurement of local foods. Some respondents noted these policies may exist, especially regarding the use of local foods at boarding schools. However, the report found that these policies are not explicit about the specific foods or quantities that should be integrated into feeding programs. While promoting the use of local foods was of value and importance, the report also highlighted that some areas may not have enough access to, and availability to a range of foods to meet nutrient requirements with some limited in soil quality, space for production and the resources required to transport and store food safely. All of which would need to be considered when identifying target countries/communities/schools and the co-design of interventions to link school food procurement with local smallholder producers.

Finally, while the report highlighted there is a dearth of information in the Pacific Islands on school feeding programmes as most published studies have focused on other regions of the globe, there is a considerable anecdotal information on various types of school feeding programmes being attempted in an ad hoc and piecemeal manner in the region which needs to be explored further.

3.3 The potential for HGSF in the Pacific Islands

Food systems in the Pacific Island countries are rapidly transitioning from local, traditional diets to those with low fruit and vegetable intake and largely based on ultra-processed foods that are often, but not always, imported. Alongside changes in diet and health outcomes, there is a rapid loss of traditional and sociocultural dimensions of food, resulting in poor quality diets in many Pacific Island populations, particularly children. Besides some of the highest rates of overweight and obesity globally, in some areas stunting rates are up to 48.4% (FAO, IFAD et al., 2021) and prevalence of anaemia (5-14 years) as high as 45% (NFNC, 2014-2015). School feeding programmes linked to traditional nutrient-rich local foods can help contribute to addressing both these challenges of ensuring sustainable healthy diets and sustainable food systems.

Targeting the possibility of developing HGSF or similar approaches in the Pacific - designed to link school feeding and agricultural development - to diversify food procurement by integrating locally grown underutilized, nutrient-rich fruits, vegetables, roots and tubers, beans and other foods (such as fruits and vegetables, beans, livestock and fish) provides opportunities to address these multiple challenges through 'triple duty actions', which simultaneously tackle malnutrition by improving the nutritional quality of school meals and boosting farmer incomes. This can also empower farmers, SMEs,

women and youth to develop alternative market linkages that increase the profitability of horticultural production beyond school procurement. Simultaneously, it increases Pacific Island resilience to external shocks that can affect the availability and accessibility of imported foods by increasing the reliance on locally grown foods.

Pacific schools can help address these diet and nutrition challenges by supporting nutritious food choice, through provision of healthy food in school meals, in canteens/tuckshops, gardens and by working with market vendors that sell to students on or near school grounds. The following sections of this SRA document collectively refer to this as 'school food provision'. School feeding programmes, like those in Palau, Nauru, Marshall Islands and planned for Kiribati, act as a crucial social safety net, ensuring children have access to at least one nutritious meal a day, and incentivise attendance, especially for girls.

Given global evidence of the impact of similar programs (WFP, 2020), these could improve food intake and health, and enhance educational outcomes for generations to come. Expanding these programs could enhance social protection and support local livelihoods, by better linking school food provision from local smallholder farmers (FAO, WFP, 2018) as recommended in the Global Action Programme (GAP) for Food Security and Nutrition in Small Island Developing States (SIDS) (FAO, UN-OHRLS, UNDESA, 2017). Some of the GAP recommended indicative actions include:

- Identify and enhance opportunities for nutrition-sensitive institutional food procurement, including school feeding programmes, to provide reliable markets for small-scale producers (Action 2.4.1.8)
- Investigate the potential to scale-up school feeding initiatives as a means to promote and ensure a sustainable market for locally produced fresh foods and to promote healthy eating habits among children (Action 2.4.1.16)
- Increase investment in and support for school food and nutrition programmes, and other public procurement programmes that are linked to local smallholder producers (Action 3.2.1.4)
- Foster and support community-led initiatives to enhance food security and nutrition, including backyard gardening and school feeding programmes (Action 3.2.1.1)
- Enhance and better coordinate support for the design, delivery, expansion and monitoring and evaluation of nutrition-sensitive social protection programmes, including school feeding programmes linked to smallholders and pro-poor agricultural development (Action 3.2.1.7)
- Enhance capacity building exchanges on innovative approaches to linking local agricultural development and public procurement (such as home-grown school feeding programmes) (Action 1.2.2.12)
- Organize south-south visits to facilitate sharing of knowledge, lessons and best practices relating to nutrition-sensitive public procurement programmes (Action 3.2.1.5)

Many of the secondary high schools in the Pacific are boarding schools where meals are already provided, putting them in a unique position. A recent report published by INA (2021), together with key informant interviews conducted by the SRA authors, has showed

that in many cases in the Pacific, especially boarding schools, school meals are inadequate to provide children with diverse and healthy diets. Meals are often lacking diversity and depend largely on imported and processed foods including rice, tinned corn and beans and apples and oranges, and less healthy foods such as tinned fish and meat and instant noodles, which are often high in a combination of salt and fat. This SRA provides an opportunity to identify practices that are currently helping or hindering food provision in boarding schools and identify potential solutions that may enhance the efficacy of these programs regarding providing nutritious meals to students and supporting local livelihoods.

This SRA therefore aimed to address current trends in inclusive nutrition-sensitive school food procurement, the recommended actions identified in this area for the Pacific and the opportunities this presents to identify and design novel food procurement and school food provision models that better link smallholders to school markets in select Pacific Island countries. Models of food procurement and school feeding that promote the sustainable production, supply and consumption of safe, underutilized nutrient-rich foods while contributing to smallholder and community livelihoods and reducing malnutrition through diet diversification. In doing so, this SRA hoped to:

- Better understand the full extent and current state of school food provision models/ programs (including school feeding, canteens and market vending) and food procurement modalities in the Pacific region to understand their constraints and barriers to local healthy and nutritious food procurement and where opportunities might exist.
- Better understand the current policy landscape and enabling environment for linking school food provision with local agriculture and procurement of food from smallholders in the region and how it can be improved.
- Identify the best-bet options for linking local agriculture to school food provision, their cost-benefit and recommendations for future action and investment, and which fully assesses the capacity of farmers to supply food of the right quality and quantity when required, and the capacity of schools to receive food and put in place a sustainable procurement model.
- Raise awareness, build support/partnerships and capacity for the implementation and evaluation of new models of school food provision in the region that link to local agriculture/producers and local nutrient-rich food.

Evidence to date illustrates a dearth of information on SFP in the Pacific region and even more so on the potential to link food provision to local agricultural production. We urgently need new research to address the knowledge gaps and barriers that have been identified so far. The focus of this research should be on expanding the school food basket to incorporate more nutritious foods linked to various agroecological contexts. This includes assessing the ability of farmers to produce vegetables, fruits, roots, tubers, and other nutrient-rich foods in sufficient quantities to meet the increasing demand from schools.

This new research will ultimately empower food vendors, local traders, and rural entrepreneurs, especially women and youth, to work with farmer associations and public institutions to source underutilized, nutrient-rich foods, and support improved farmer production. It will also help to better understand how to further replicate and scale a local food procurement model in the region. The SRA purposely includes the active involvement

of stakeholders from agriculture, health (nutrition) and education sectors, recognising that school food provision is a cross-cutting program and requires multisectoral collaboration to be successful.

The research questions this SRA addresses include:

- What are the types of school food provision models that are currently practiced in the Pacific? What does this mean in terms of diet quality of students and supporting livelihoods of local farmers?
- What opportunities do inclusive school food provision interventions have on improving both student's diet quality, as well as improving smallholder income/resilience/livelihoods?
- What are the constraints to current food production practices and how can they be improved to increase production of safer, nutritious underutilized vegetables, fruits and other foods (including fruit and vegetables, legumes, roots and tubers, livestock and fish) that would allow for a reliable supply to schools?
- To what extent are current school food procurement processes, policies and local supply chains limiting the inclusion of underutilized nutrient-rich foods and other healthy food options, and what actions can be taken to overcome these barriers?
- What is the current school food policy environment in the target countries and what actions can be taken to integrate a wider range of underutilized nutrient-rich foods in schools?
- What are the capacity development needs in the Pacific to implement effective nutrition-sensitive school food provision interventions?

3.4 Research and/or development strategy and relationship to other ACIAR investments and other donor activities

This SRA builds upon pilot activities undertaken in Busia, Kenya, between 2015 and 2017 within the framework of the ACIAR-funded *Linking Smallholders to Markets* (HORT/2014/100) and the *School Food Revolution* (GP/2017/007) SRA projects which set out to test how schools can offer predictable and stable markets for smallholder farmers practising sustainable agriculture and increase demand for traditional nutrient-rich leafy vegetables. It also builds on SRA GP/2018/101 *Analysing Schools as Platforms to Improve Diets Livelihoods and the Environment in four countries in East Africa* which sought to better assess the potential to scale up the Busia model to other parts of East Africa with additional crops, foods and partners. It draws on the experiences, practices and lessons of the Biodiversity for Food and Nutrition (BFN) project and other related public food procurement initiatives coordinated by Bioversity International which aim to link local food biodiversity with school feeding programmes and public food procurement (Swensson et al, 2021a,b).

The scope of the SRA is also of key interest to the recently established PSFN and the Pacific Community (SPC). The PSFN (www.pacificschoolfoodnetwork.org), which for the first time brings together a network of individuals from the region with expertise across a broad area of school food environments, aspires to connect stakeholders from across food systems, including primary producers, educators and nutrition and health experts to better link local agriculture to schools to ensure better availability of local nutrient-rich, healthy and culturally relevant food is provided in schools.

The SRA also aligned with the interests and recent activities of SPC which has been developing a food systems programme across the organisation with the objectives of improved health, livelihoods, and ecosystem outcomes. The school food environment is seen by SPC as a key opportunity within the broader programme. SPC is a key collaborator in this project, contributing to project governance, providing a critical Pacific voice, and provide insight into critical synthesis and understanding of the results. SPC is responsible for the PILNA (Pacific Islands Literacy and Numeracy Assessment) database, which currently includes data that when analysed would help inform this SRA (for example, data on the number of students who consume breakfast, presence of school canteens/tuckshops in the region). SPC through initiatives like the Pacific Organic and Ethical Trade Community (POETCom) and its partners, offers considerable potential for schools to link with the extensive networks of already established Pacific Island smallholders and producers with potential to supply healthy foods. This includes linkages and commonalities to the Network of Organic Learning Farms to be established under the EU-funded KIWA Initiative and other projects, such as the EU-funded PROTEGE Initiative. SPC could also provide a pivotal role in championing other farm to school networks at a regional level through its convening power, advocacy and awareness raising as well as establishing structures that can help sustain this work.

Collectively, both the PSFN and SPC can bring together the key countries, stakeholders and partners to facilitate an effective and sustainable farm to school network in the region. This SRA is also much in line with the current global interest and goodwill following the UN Food Systems Summit to improve the quality and delivery of school meals, as exemplified by the emerging global School Meals Coalition, and also aligns with some findings and recommendations of the recent SMC White Paper on School Meals and Food Systems (Pastorino et al., 2023). Documentation from the UN Food Systems Summit acknowledges the role of school food provision in several countries, including Fiji, Palau, Marshall Islands, Nauru and Samoa (UNFSS, 2021). By partnering with the PSFN and SPC, we can use the outputs and findings of this SRA to inform the global coalition and ensure that the Pacific region receives due attention going forward.

This SRA also aligns with activities supported by the Food and Agriculture Organization of the United Nations (FAO) Sub-regional Office for the Pacific Islands Multi-Country Strategy (FAO, 2018-2022). In 2018 (Burkhart et al., 2019) and 2019 (FAO, in press) two projects investigating the current state and capacity for school food and nutrition education and school food programs (noted above). In 2020, researchers assessed school food environments in Fiji as part of a wider food system project (Burkhart et al., 2021). The assessment included the use of school gardens, but it was limited to a sub-group of schools aligned to the Health Promoting Schools framework. Because of the onset of COVID-19, it may not have fully represented the traditional use of the gardens.

The SRA aligns with Australia's strategic approach to assist partner countries make progress towards the Sustainable Development Goals, particularly to tackle poverty and food insecurity by increasing agricultural productivity, diversifying farming systems, and improving market access for smallholder farmers. The proposal also fits with several of the Australian Government's Science and Research Priorities and corresponding Practical Research Challenges.

DFAT (specifically the Agriculture Development and Food Security Section) has indicated their support for this scoping research and their interest in potentially co-investing in a next phase that would see the testing of the school food models identified as outputs of this

SRA. This provides strategic opportunity for both scaling, and further research and action in the region.

The SRA also strongly aligns with ACIAR's increasing focus on research into the wider nexus of food security, nutrition-sensitive agriculture, human health and livelihoods, particularly ACIAR's Annual Operational Plan (AOP) 2017-2018 and its Corporate Plan 2017-2021. Results from this SRA, and any larger proposal arising from this, will assist ACIAR in furthering its efforts and monitoring its performance across the six outcome-focused objectives of its Strategic Vision in the broad areas of *Food security and poverty reduction; Natural resources and climate; Human health and nutrition; Empowering women and girls; Value chains and private sector engagement; and Building capacity.*

There are opportunities to link with other donor initiatives in the region. Three United Nations agencies operating in the Pacific are interested in school feeding: UNICEF, FAO and IFAD. There is a timely opportunity to partner with these scaling organisations to imbed strong research and evidence generation, leveraging their development programming capacity, as well as provide direct pathways to scale from results of this and future projects through fostering these partnerships for research for development.

4 Objectives

4.1 Overall aim

The aim of this SRA was to provide an understanding of the current extent and status of school food provision in Pacific Islands countries with a focus on better understanding the enabling policy environment, institutional and farmer capacity to better support the integration of local agriculture into school food provision. The SRA sought to identify those country contexts that could provide the best conditions for future school food provision programmes linked to local agriculture, supplying healthy, nutritious, and culturally appropriate local food. At the same time the SRA aimed to build partnerships and awareness among stakeholders of the multiple benefits of putting in place SFP that better link to local agriculture, and to establish a common consensus on the future steps needed to implement action to strengthen linkages between local agriculture and schools in a small group of 'best bet' countries and the wider promotion of this approach in the Pacific region.

4.2 Objectives

The objectives of this SRA were:

1. To understand the current state of local agriculture into school food provision in in the Pacific Islands region.
2. To understand the current policy landscape and enabling environment for integration of local agriculture into school food provision.
3. To identify the best-bet sustainable options for integrating local agriculture in school food provision and recommendations for future action.
4. To build awareness and consensus around the multiple benefits of integrating local agriculture in school food provision and identify partnerships for collective action on key next steps.

5 Methodology

Activities within this SRA were implemented between January 2022 and March 2024 and provide a comprehensive analysis of current school food provision in the Pacific and the potential to better link with local agriculture for the provision of healthy, nutritious, and culturally appropriate food.

The project received human ethics approval from the University of the Sunshine Coast Human Ethics Committee (A221825). This reflected that all data was to be collected by researchers based in Australia, and not in country. This ethics approval was communicated to all invited participants using a required participant information sheet and an informed consent process. All interviews occurred virtually (using zoom).

The specific methodologies utilised for each objective are further described below.

Objective 1. To understand the current state of integration of local agriculture into school food provision in the Pacific Islands region.

To achieve objective 1, the following activities were undertaken:

- 1.1. A regional scoping study, including a systematic literature review and interviews with key stakeholders (KII)
- 1.2. Development of a database of school food provision related activities in the region
- 1.3. Identification of a recommended subset of countries to focus objectives 2-4

A regional scoping study, utilising a systematic literature review (appendix A) and key informant interviews (KII) (appendix B) with key stakeholders, was used to identify what existing school food provision initiatives exist in the Pacific, and if so, how local agriculture is integrated into school food provision. The scoping study used a regional approach, and included the following countries: Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Pitcairn Islands, Samoa, Solomon Islands, Timor-Leste, Tokelau, Tonga, Tuvalu, Vanuatu and Wallis and Futuna.

The systematic literature review identified and collated existing published and grey literature. Information extracted and collated included any reference to the provision of food in schools (Primary and Secondary level) and how schools incentivise consumption of nutritious, local foods (for example through learning activities). This included the use of school feeding models, use of canteens/tuckshops, vendors that provide food in/near school, school garden activities, and nutrition education (curriculum and/or learning materials) related to consumption of nutritious, locally produced foods. Any relevant materials published from 2017 onwards were included to ensure the currency of information.

Given that extensive documentation on Pacific school food provision was not likely to be published or available online given the often grassroot nature of initiatives in the Pacific, the systematic literature review was supplemented with KIIs to 1. verify information found within the systematic literature review, and 2. request additional information that may not have been found in this review. KII were held with 37 key stakeholders, identified through

existing networks, including the Pacific School Food Network (PSFN), SPC and reaching out to Ministries of Education, Agriculture and Health.

During the KII respondents were asked questions about the foods provided to students, who and from, where food was purchased from, what, if any contract or procurement arrangements were in place with local farmers or vendors providing food to the program, if nutrition guidelines were used when designing menus, if nutritionists or dietitians were involved in this, and if there was a requirement from the school, policy or other guiding body to include locally sourced foods in the initiative. The type of food procurement model used was then derived from these answers.

KII responses were analysed inductively, using a conventional content analysis approach, whereby themes were developed directly from the answers provided.

Information generated in the systematic literature review and KIIs was collated in a database, generating an inventory of the current school food provision initiatives and, subsequently, documenting the different models being implemented in the Pacific. The database is publicly available and has been published on the PSFN [website](#). The database, together with the prevalence of initiatives, stakeholder engagement and willingness to be involved, and geographical context were used to select a subset of priority countries to focus objectives 2, 3 & 4. The countries selected were Fiji, Federated States of Micronesia, New Caledonia, RMI, Timor-Leste and Vanuatu.

Objective 2. To understand the current policy landscape and enabling environment for integration of local agriculture into school food provision

To achieve objective 2, the following activities were undertaken:

- 2.1. Analyse the school food provision policy environment in a subset of countries
- 2.2. Undertake a deep dive into policy areas/policy analysis in a subset of countries to see what the policy enabling environment is to guide the best-bet model design.
- 2.3. Document case studies of examples where home-grown school food initiatives are being done effectively.

A systematic literature review was originally planned to identify the current policy landscape and enabling environment. Based on the limited published literature identified in objective one, the research team decided to change the methodological approach. The approach changed to systematically searching for and reviewing available and published public policy relevant to nutrition and school food. Initially, policy was identified for all 22 countries, however a deep dive was undertaken to identify and review current policy frameworks that relate to the provision of food in or near schools and/or linking agriculture to schools in the sub-set of countries. Team members systematically searched online sources, including policy databases and government websites, to identify current policy documents.

KIIs were used to further explore the policy landscape and enabling environment in the sub-set countries. The KII respondents were asked to provide information on current relevant policies, policy development processes and to verify policy documentation if this had been located online (appendix C). This allowed for the identification of examples where policy had supported integration of local food in schools, which was important to guide the best-bet model design.

When examples of supportive and enabling policy environments were identified (in activities 2.1. and 2.2.), these were documented as case studies. These case studies are currently in draft form and require final validation from in-country stakeholders. These will be presented in a visual infographic form and be provided alongside the final webinar in mid-April.

Objective 3. To identify the best-bet sustainable options for integrating local agriculture in school food provision and recommendations for future action

To achieve objective 3, the following activities were undertaken:

- 3.1. Building on findings from objectives 1 and 2, review available information, consult with and evaluate farmer organizations and related actors in subset of countries with capacity to supply local schools by assessing major strengths, constraints and opportunities.
- 3.2. Assess the diversity of nutritious foods (food basket) that could potentially be supplied to schools (or directly to students via market vendor models) and how this addresses the needs of receiving schools/students.
- 3.3. Undertake a needs assessment of the best-bet school supply chains that identifies and prioritizes the needs of food producers, other value chain actors and receiving schools.
- 3.4. Assess the potential for subset countries to establish an institutional support structure that will sustain the best-bet school supply chains beyond any intervention.
- 3.5. Conduct a virtual stakeholder workshop with key actors in subset countries that will identify 1) business case for best-bet options for integrating local agriculture in school food provision that allows for a (partial) self-sustaining model, 2) identify tentative project pilot sites, and 3) identify the broader partnership needed at country and local level to implement best-bet options.

The focus of Objective 3 was to undertake a deep dive of the subset of countries to understand the model(s) that are most likely to be successful and sustainable. KII were undertaken with school food supply chain actors to identify the needs of the schools (i.e., '*what food is needed?*'), the capacity of producers to supply food and to identify capacity needs, infrastructure required, value chain development, and policy and enabling environment support (appendix C).

The diversity of nutritious foods was assessed by searching for, and collating, secondary data of key crops for each sub-set country. This was completed using FAO-STAT, WorldBank and SPC databases (including Pacific Nutrient Database, Pacific Food Trade Database). This information was then validated during the KII, and any additional information added to each subset country list.

A virtual regional consultation workshop was also held in January 2024, focussing on understanding entry points and discussing models for the region. An invitation to attend was sent to all stakeholders who had been invited to participate in the research. The workshop was 90 minutes in duration and summarised the project findings, before breakout discussion groups were utilised to discuss key questions.

Objective 4. To build awareness and consensus around the multiple benefits of integrating local agriculture in school food provision and identify partnerships for collective action on key next steps

To achieve objective 4, the following activities were undertaken, or are planned for:

- 4.1. A Regional Workshop to present the findings of the scoping study and raise awareness and understanding of the multiple benefits of linking local agriculture to school food provision.
- 4.2. Validate the selected best-bet options identified and seek consensus from the wider group of stakeholders on what a successful homegrown model in the Pacific looks like.
- 4.3. Build a Pacific regional coalition for school food provision linked to local agriculture that will promote the findings of the scoping study widely and be a key partnership for future action.
- 4.4. Identify existing or planned research or development projects that could be linked with a potential next phase of the research to test and validate the models.

During objective 3, a virtual participatory workshop brought together key stakeholders and actors from the national education, health and agriculture and other sectors, community and farmer organization representatives and NGOs, and key donors. The workshop was successful in understanding preferred models and entry points.

Another webinar is planned for mid-April 2024 and will highlight examples of successful initiatives that have linked local agriculture and foods to school food provision globally, the factors that contribute to success, best practices, the impacts of this approach and how different actors and beneficiaries across the school food supply chain benefit. Other wider societal benefits that arise from this approach to diets, nutrition and health, as well as food systems and environmental sustainability, will also be highlighted. The second part of the workshop will focus on presenting the overall findings from the SRA. This will include the presentation of the business cases for best-bet options to better integrate local agriculture to school food provision in selected Pacific Island countries for any further discussion.

In March, a key stakeholder from this project, The Pacific Blue Foundation, presented a webinar with the PSFN for International School Meals Day and showcased the Green School Program that is used in Fiji.

Throughout the process, the authors have identified research and development projects that may align with this, or a potential next phase of this research through discussions with stakeholders.

6 Achievements against activities and outputs/milestones

6.1 Objective 1

To understand the current state of integration of local agriculture into school food provision in the Pacific Islands region.

no.	activity	outputs/ milestones	completion date	comments
1.1	A regional scoping study, including a systematic literature review and KII.	<p>Mapping and interviews completed.</p> <p>A report outlining key findings of the scoping study and a Regional database of school food related activities.</p> <p>A presentation was provided at the International Union of Nutrition Sciences (IUNS) conference in Dec 2022 (with other speakers showcasing activities from the region – Fiji, Palau and Papua New Guinea – see appendix D).</p>	May 2023	The regional scoping study (systematic literature review and KII) was completed. This information will be included in a peer-reviewed manuscript for submission to The Lancet Regional Health – Western Pacific journal (manuscript 1). Further findings are provided in Section 7.
1.2	Development of a database of school food provision related activities in the region.	<p>Mapping and interviews completed.</p> <p>A one-page infographic is currently being finalised for sharing with key stakeholders and governments.</p>	December 2023	<p>Information for the database was collected and the database is currently available on the Pacific School Food Network website.</p> <p>This information will also be included in a peer-reviewed manuscript for submission to The Lancet Regional Health – Western Pacific journal (manuscript 1). Further findings are provided in Section 7.</p>
1.3	Identify recommended subset of countries to focus objectives 2-4.	The database, together with the prevalence of initiatives, stakeholder engagement and willingness to be involved, and geographical context were used to select a subset of priority countries to focus objectives 2, 3 & 4.	May 2023	The following countries were identified for inclusion: Fiji, Federated States of Micronesia, New Caledonia, Republic of Marshall Islands, Timor-Leste and Vanuatu.

6.2 Objective 2

To understand the current policy landscape and enabling environment for integration of local agriculture into school food provision.

no.	activity	outputs/ milestones	completion date	comments
2.1	Analyse the school food provision policy environment in a subset of countries	A spreadsheet of policy (agriculture and nutrition related) has been developed. A report (2) summarising the policy environment as related to school food provision. This report will be a peer-reviewed journal article to assist with dissemination (with 2.2.).	December 2023	An overview of policy is summarised in section 7. A manuscript that shares the findings of the policy mapping activity is in draft and will be submitted to Food Security (journal) (manuscript 2).
2.2	Undertake a deep dive into policy areas/policy analysis in a subset of countries to see what the policy enabling environment is to guide the best-bet model design.	Policy mapping is complete. Some triangulation was required through interviews. A report (2) summarising the policy environment as related to school food provision. This report will be a peer-reviewed journal article to assist with dissemination (with 2.1.).	December 2023	An overview of policy is summarised in section 7. A manuscript that shares the findings of the policy mapping activity is in draft and will be submitted to Food Security (journal) (manuscript 2). A one-page infographic is currently being finalised for sharing with key stakeholders and governments.
2.3	Document case studies of examples where home-grown school food initiatives are being done effectively.	Countries have been identified (sub-set countries identified above). Case study documentation	In progress (delayed due to verification with respondents)	Case studies under development, require final validation by in-country stakeholders. The project team will contribute their time to completing this activity. These will be completed during April 2024 and shared with ACIAR. Case studies will be shared as visual infographics and in April webinar. The case studies will also be used to inform and be part of manuscript 1.

6.3 Objective 3

To identify the best-bet sustainable options for integrating local agriculture in school food provision and recommendations for future action.

no.	activity	outputs/ milestones	completion date	comments
3.1	Building on findings from objectives 1 and 2, review available information, consult with and evaluate farmer organizations and related actors in subset of countries with capacity to supply local schools by assessing major strengths, constraints and opportunities	Output and Workshop Report on the feasibility of integrating local agriculture in school food provision identifying the business case options for pilot testing in a select group of countries, key recommendations and next steps and the necessary partnership for successful implementation. Peer-reviewed scientific article (see comments)	February 2024	This information will be included in a peer-reviewed manuscript for submission to The Lancet Regional Health – Western Pacific journal (manuscript 1). Further findings are provided in Section 7.
3.2	Assess the diversity of nutritious foods (food basket) that could potentially be supplied to schools (or directly to students via market vendor models) and how this addresses the needs of receiving schools/ students.	(see 3.1. above)	February 2024	This information will be included in a peer-reviewed manuscript for submission to The Lancet Regional Health – Western Pacific journal (manuscript 1). Further findings are provided in Section 7.
3.3	Undertake a needs assessment of school supply chains that identifies and prioritizes the needs of food producers, other value chain actors and receiving schools.	(see 3.1. above)	February 2024	Interviews were somewhat limited as it was challenging to identify and enable local farmers to participate when completing the project virtually. Available findings will be included in a peer-reviewed manuscript for submission to The Lancet Regional Health – Western Pacific journal (manuscript 1). Further findings are provided in Section 7.

3.4	Assess the potential for subset countries to establish an institutional support structure that will sustain the school supply chains beyond any intervention.	(see 3.1. above)	February 2024	Interviews were somewhat limited as it was challenging to identify and enable local farmers to participate when completing the project virtually. Available findings will be included in a peer-reviewed manuscript for submission to The Lancet Regional Health – Western Pacific journal (manuscript 1). Further findings are provided in Section 7.
3.5	Conduct a virtual stakeholder workshop with key actors in subset countries that will develop options for future scenarios and possible mechanisms for piloting interventions, including 1) options for integrating local agriculture in school food provision that allows for a (partial) self-sustaining model, 2) tentative project pilot sites, and 3) identification of the broader partnerships needed at country and local level to implement pilots.	Workshop Report Peer-reviewed scientific article (see comments)	January 2024	A virtual workshop was held in January 2024. The workshop report can be found in appendix E. Key findings from this activity will be presented in manuscript 1.

6.4 Objective 4

To build awareness and consensus around the multiple benefits of integrating local agriculture in school food provision and identify partnerships for collective action on key next steps.

no.	activity	outputs/ milestones	completion date	comments
4.1	A Regional Workshop to present the findings of the scoping study and raise awareness and understanding of the multiple benefits of linking local agriculture to school food provision.	Workshop Report	April 2024 (delayed due to confirmation of presenters and finalising of case studies)	The virtual workshop is planned for mid-April 2024. This will be presented as a webinar (with discussion) and provides an opportunity for case studies to be shared. The Pacific School Food Network will assist with this. A 3 - 4 page research brief will also be developed for sharing key findings. The project team will contribute their time to completing this activity. This will be completed during April 2024 and shared with ACIAR.

4.2	Endorse the research opportunities identified and seek consensus from the wider group of stakeholders on what a successful farm to school food programme in the Pacific looks like.	(see 4.1 above)	April 2024	As it was difficult to engage farmers and local value chain actors using virtual communication, there is limited feedback from this group. However, the virtual workshop and interviews already completed, provide feedback on models and entry points. This will be further discussed at the April 2024 webinar.
4.3	Identify existing or other planned research or development projects that could be linked with a potential next phase of the research to test and validate the models.	-	March 2024	The project team has identified existing research or development projects that could be linked with a next phase of research. This has been detailed in section 7.4. Objective 4 Key findings.

7 Key results and discussion

This SRA aimed to investigate inclusive nutrition-sensitive school food procurement, identify the recommended actions identified in this area for the Pacific and the opportunities this presents to identify and design novel food procurement and school food provision models that better link smallholders to school markets in select Pacific Island countries. The findings and discussion are presented with detailed results and an overall summary for each objective. Finally, an overview of key learnings and limitations, and partnerships is provided.

7.1 Objective 1 Key findings

Objective 1 included a systematic literature review, KII and online surveys. The key findings from these are discussed below.

Systematic literature review

An initial systematic literature review identified 12 literature sources that referenced a school food provision activity or program. Seven of these sources specified details of activities on school feeding programs, four referenced school gardens, four referenced school canteens and three referenced school curricula related to school food provision (Table 1). Several other sources were excluded from the final literature review due to lacking detail on program characteristics. In these cases, KIIs were attempted to capture this information in activity 1.2 to supplement this information.

Table 1. Overview of school food provision activities identified in literature.

Countries	School Food Provision Activities			
	School Canteens	School Gardens	School Feeding Programs	School Curricula
Cook Islands				School garden and nutrition education partly integrated into curricula in some schools ¹² M
Fiji		Some schools accredited with HPS have food production activities (e.g., gardens, poultry, hydroponics) ¹¹ M	Free Fruit Initiative for Early Childhood Education (ECE) ¹ M Free Milk Initiative ¹ M Save the Children Feeding Program ¹ NC Some schools accredited with HPS provide school meals ¹¹ M	School garden and nutrition education partly integrated into curricula in some schools, including those accredited with HPS ^{11, 12} M
French Polynesia	Ressources Alimentaires et Santé aux Australes (RASA) ²			

Guam				Food Friends Mighty Moves (FFMM) curricula ³ M
Kiribati		Horticulture & Nutrition Enhancement Project ⁸ NC	Kiribati Government Senior Secondary School Student Lunch ⁴ M	School garden and nutrition education partly integrated into curricula in some schools ¹² NC
Marshall Islands		Learning Garden Project ⁸ NC	The School Hot Lunch Program ⁸ NC Primary school Lunch for private schools on Majuro Atoll ⁸ M	
FSM				School garden partly integrated into curricula in some schools ¹² NC
Nauru	Nutrition Education Program ¹⁰ NC	Nutrition Education Program ¹⁰ NC	Nauru School Feeding Program ⁵ NC	School garden partly integrated into curricula in some schools ¹² M
Niue				Nutrition education partly integrated into curricula in some schools ¹² M
Palau		Horticulture & Nutrition Enhancement Project ⁸ NC	Food Service Program ⁶ NC	School garden and nutrition education partly integrated into curricula in some schools ¹² M
Samoa		Apia Primary School Kitchen Garden Project ⁸ NC		School garden and nutrition education partly integrated into curricula in some schools ¹² M
Solomon Islands	Local Kai Kai Project ⁸ NC School Health Program ⁸ NC Technical Cooperation Programme ⁹	School vegetable and fruit improvement project TTM ⁸ Technical Cooperation Programme ⁹ M		School garden and nutrition education partly integrated into curricula in some schools ¹² M
Timor-Leste			School Lunch Program (Programa Merenda Escolar – PME) ⁷ M	
Tokelau				School garden and nutrition education partly integrated into curricula in some schools ¹² M

Tonga				School garden and nutrition education partly integrated into curricula in some schools ¹² M
Tuvalu			Motafoua Secondary School Lunch Program ⁸ NC	
Vanuatu				School garden and nutrition education partly integrated into curricula in some schools ¹² M

Please note, associated references are listed in Section 9.4.

Key: Scale of activities
N – National level
M – Multiple schools
I – Individual school
NC – Not clear

One source detailed a study based in Fiji surveyed the school food environments of 88 schools, representing 43% of the 204 schools with the World Health Organization (WHO) Health Promoting Schools (HPS) accreditation (Burkhart et al., 2021). Of these schools, 71 reported having a garden, of which the most common purpose was to provide food for school students. Some of these gardens were also linked to the school curriculum, though details were limited. A small proportion of these schools (n= 10) reported other food production activities, including chicken or poultry husbandry, hydroponics, bee keeping, aquaculture, piggery, and fruit trees. School food provision varied across the surveyed schools with 39 schools (44%) providing at least one meal (e.g., breakfast, morning snack, lunch, or afternoon snack). Although 79% of surveyed schools reported having a canteen or tuckshop, further details about whether food provided were local or imported were not discussed.

Most of the literature sources were focused on one country, however two reports (that have been introduced in the background, by Burkhart et al., 2019, and Burkhart et al., in publication), included 14 Pacific Island countries. Five out of the 22 countries included in the literature review (Fiji, Kiribati, Nauru, Palau, and Timor-Leste) were identified in the Global Child Nutrition Foundation’s Global (GCNF) Survey of School Meals Programs. It is possible that the remaining 17 countries may have school feeding programmes in place, for example, in boarding schools, but they are not reported on in this survey due to non-completion or governments not viewing boarding school programs as a SMP (GCNF, 2019, 2022).

Kil and surveys

Forty-three people took part in these Kils and online surveys. Thirty key informant interviews with 37 respondents were conducted and six respondents completed a Qualtrics survey (n = 4) or answered questions in writing via email (n = 2). Respondents provided information on behalf of 15 PICTs (Cook Islands, CNMI, FSM, Fiji, French Polynesia, Marshall Islands, Nauru, New Caledonia, Samoa, Solomon Islands, Timor-Leste, Tonga, PNG, Vanuatu, and Wallis and Futuna).

The respondents comprised of Pacific based community leaders, nutrition or agriculture specialists, representatives of farmer associations, policy makers in government, market and value chain actors, school actors (e.g., headmasters, garden or feeding program coordinators, procurement officers, caterers), representatives from government ministries and/ or departments (e.g., ministry of health, education, agriculture, food and/or forestry), government advisors, academics from Pacific based universities, and representatives of non-government organisations (NGOs). All respondents were involved (currently or in the past) directly with some type of school food provision activity, or they had a considerable insight into programs in particular countries because of other indirect work experience. Several respondents could not provide sufficient information regarding the activities and thus knowledge gaps exist regarding some ongoing initiatives. The following results section contains key information from these interviews and surveys, as well as some additional information found from the original scoping study (section above).

7.1.1 School food provision programs

Two main typologies of school food provision programs were identified: school feeding, and school gardens with other, less common types of initiatives categorised as 'other'. 'Other' initiatives were standalone projects, for example a capacity needs assessment, nutrition education, or were activities linked to schools but not in the form of direct food provision. Table 2 describes all the school food provision programs identified in objective 1, by country.

Table 2. All School food provision programs identified (gardens, feeding and other)

Country	Name	Category	Started	Status
Cook Islands	Cook Islands School Garden Program	Garden program	2018	Ongoing
FSM	ECE School Feeding Program	Feeding program	—	Ongoing
	Secondary School Feeding Program	Feeding program	—	Ongoing
	School Garden Program	Garden program	—	Ongoing
Fiji	Green Schools Program	Garden program	2020	Ongoing
	Maritime Islands boarding school feeding program	Feeding program	—	Ongoing
	TKC Gardening Pilot Project	Garden program	2022	Ongoing
	Free Milk Initiative	Feeding program	2015	Finished
	Cicia High School Feeding Program	Garden & Feeding program	2006	Ongoing

	Free Fruit Initiative	Feeding program	N/A	Not clear
	Save the Children Feeding Program	Feeding program	2016	Concluded - Temporary disaster relief program
French Polynesia	PROTEGE	Feeding program	2022	Concludes in 2024, with plans to upscale
	Ressources Alimentaires et Santé aux Australes	Other	2015	Pilot - Concluded
Guam	National School Lunch Program	Feeding program	1946	Ongoing
Kiribati	Kiribati Government Senior Secondary School Student Lunch	Feeding program	1922	Ongoing
	Horticulture & Nutrition Enhancement Project	Garden program	2016	Not Clear when it finished
Marshall Islands	School Breakfast Pilot	Feeding program	—	Concluded
	School Lunch Program	Feeding program	—	Ongoing
	School Learning Garden Program	Garden program	2014	Ongoing
Nauru	School Lunch Program	Feeding program	2013	Ongoing
New Caledonia	PROTEGE	Feeding program	2022	Concludes in 2024, with plans to upscale
	Pacific School Food Lab	Other	2014	Ongoing
	Northern Province Boarding School Feeding Program	Feeding program	Early 1900's	Ongoing
CNMI	School Farming Project	Garden program	2019	Ongoing
Palau	Food Service Program	Feeding program	—	Ongoing
	Horticulture & Nutrition Enhancement Project	Garden program	2016	Concluded in 2018
PNG	Marobe School Gardens Project	Garden program	2020	Concluded 2022, ongoing in some schools
	Capacity Assessment – School Meal Project	Other	2021	Project finished in 2023, gardens are ongoing

	Boarding School Feeding	Feeding program	—	Ongoing
Samoa	Apia Primary School Kitchen Garden Project	Garden program	2018	Not clear
Solomon Islands	Boarding School Feeding	Feeding program	—	Ongoing
	Local Kai Kai Project	Other	—	Not clear
Timor Leste	School Lunch Program (Programa Merenda Escolar)	Feeding program	2015	Ongoing
Tuvalu	Motafoua Secondary Boarding School Lunch Program	Feeding program	—	Not clear if it's still running
Vanuatu	Kaikai Local, Kaikai Healthy program	Feeding program	2021	Ongoing, self-sustained by school
	Baldwin Lonsdale Memorial School and Ambaebulu Junior Secondary School farm to school project	Feeding program	2019	Ongoing

School feeding programs

The feeding programs identified varied in scale, the school(s) type (for example, day schools vs. boarding schools), and the year levels of the children that food was provided to. National scale programs were reported for Fiji, although these were programs designed to provide food items (fruit, milk with Weetabix) not meals, Guam, Kiribati, RMI, Nauru, Palau and Timor-Leste. Large scale boarding school programs were identified in Papua New Guinea, Solomon Islands, and Kiribati. Only one program for early childhood education was identified, in the Federated States of Micronesia (Pohnpei).

One feeding program was a temporary measure for natural disaster relief, while two programs aimed to provide access to specific foods (fruit and milk with Weetabix) in Fiji. Lunch was the most common meal across the programs. This is likely to be due to the structure of the school day in the region (lunch typically falls midway through the school day). Most of the programs serve food Monday – Friday, during the school year, most likely reflecting the nature of boarding schools.

Majority of the school meal portion sizes were fixed serves, however the PROTEGE program (French Polynesia and New Caledonia) allows secondary students to decide on portion sizes. The Northern Province boarding school feeding program in New Caledonia also provides students with the flexibility to serve their own portion sizes. The key program characteristics are described in Table 3.

Program goals

Goals across all programs were similar in that they often referred to enhanced educational outcomes, promoting healthy consumption behaviours, providing food security, connecting younger generations with culture, traditional and local foods and food practices, promoting local livelihoods and promoting agriculture. The management and involvement of key stakeholders varied across programs, with NGO's, Ministries and donor partners often involved. The program goals are described in Appendix F.

Foods provided and procurement

Food procurement practices varied across countries. Eight of the programs identified a requirement to use local foods, and while they did not have a requirement to do so, two additional programs also reported sourcing local foods. Of the 7 programs where information was available for contract arrangements with farmers, 6 utilised informal agreements (although 1 noted it would move to formal in the future) and 1 was a formal agreement (Free Milk Initiative in Fiji). Eight programs used nutrition guidelines, while 9 reported nutritionist/dietitian involvement.

A broad range of fruits and vegetables were included on school menus, alongside root crops. Protein sources included chicken, tinned and fresh fish, tinned and fresh meat and eggs. Cereals, particularly rice, was also included on many menus. The sources of food included community and family gardens, local farmers, local stores and markets, local dairy. In some instances, respondents indicated that there are some types of food that could be supplied by local farmers but are not currently. Respondents also indicated that the types of food purchased were often dependent on availability, seasonality, affordability, transportation, food storage facilities, individual choice and food safety, preparation, and packaging requirements. Table 4. Describes the types of food provided, menu development and food procurement practices.

Funding

Funding for school feeding programs varies across the region. Of the school feeding programs that reported funding (n=16), all were funded by the government (Department or Ministry of Education), either fully or partially. Three of the school feeding programs were funded by both the government and parents. For example, in French Polynesia and New Caledonia the government covered 80% and parents contributed 20% of the costs per meal, respectively. In Vanuatu, the Kaikai Local Kaikai Healthy school feeding program was funded by European Development Fund and facilitated by the government, with parents contributing an unspecified cost. In rural areas, such as the Maritime Islands boarding school feeding programs and Cicia Island High school feeding program, produce was provided in-kind by the community or grown in the school garden to supplement government funding for boarding school meals.

The cost and funding allocated per meal varied between each country, ranging from 0.43c to 4.74 per meal (USD). respondents were asked if funding was enough to provide adequate quality and quantity of school meals. Of the 9 programs that responded, seven responded as 'no'. Reported contributing factors to this included food inflation, economic crisis from the Ukraine war, budget cuts or delayed payments of funding to schools. As an example, the FSM ECE School Feeding Program recently had its funding cut by half, during a time of major inflation on imported foods, posing a significant challenge to provide adequate quantity and quality of meals. There have been examples however of increased budgets. Funding for the RMI program recently doubled post Covid-19, with a goal of increasing the amount of fruits and vegetables utilised. As a result, RMI was one of only two programs that reported having adequate funding. Following advocacy from aid organisations and government investment, the Timor-Leste School Lunch Program (Programa Merenda Escolar) budget has increased from 25c to 43c per meal.

Table 3. School feeding programs identified with scale, type of school and year levels.

Country	Name	Scale	Type of School	Year Levels	Meal	Days	Duration	Eating Location	Portions
FSM	Early Childhood Education School Feeding Program	Regional: Pohnpei	Day school: public and private (mainly public)	Primary (5 to 16 years)	Lunch + snack	Monday-Friday	During the school year	School	Fixed
	Secondary School Feeding Program	Regional: Pohnpei	Day school: public and private (mainly public)	Secondary	Lunch	Monday-Friday	During the school year	School	Fixed
Fiji	Maritime Islands boarding school feeding program	Maritime Islands	Public boarding school	Primary	Breakfast, lunch and dinner	Monday-Friday	During the school year	School	—
	Free Milk Initiative	National	Day and boarding school	Primary (Year 1 students only)	Snacks (milk)	Monday-Friday	During the school year	School	Fixed
	Cicia Island High School Feeding Program	1 school: Cicia Island	Boarding and day school	Secondary	Breakfast, lunch and Dinner	Every day	During the school year	School	—
	Free Fruit Initiative	National	Public and Private schools	Early Childhood levels	Snacks (fruit)	Monday-Friday	During the school year	School	—
	Save the Children Feeding Program	Covers 16 schools adversely affected by natural disasters	Boarding and day schools	—	—	—	Temporary, during the school year	School	—

French Polynesia	Pacific Territories Regional Project for Sustainable Ecosystem Management (PROTEGE)	International: 4 schools in French Polynesia	Day and boarding schools (Mainly Public)	Primary and secondary (6 to 18 years)	Lunch (including entrée, main and dessert)	Monday, Tuesday, Thursday, Friday	During the school year	School	Primary school: Fixed Secondary school: Flexible – student decides
Guam	National School Lunch Program	National	All schools	Primary and secondary	Lunch	Monday-Friday	During the school year	School	—
Kiribati	Kiribati Government Senior Secondary School Student Lunch	National	Public: Day and boarding schools	Secondary	Lunch	Monday-Friday	During the school year	School	—
Marshall Islands	School Breakfast Pilot	NA	—	—	Breakfast	—	—	School	—
	School Lunch Program	National	public and private day schools	Primary and secondary	Lunch	Monday-Friday	During the school year	School	Fixed
Nauru	School Lunch Program	National	public and private day schools	Preschool, primary, and secondary	Lunch + take home leftovers (if available)	Monday-Friday	During the school year	School	Fixed
New Caledonia	Pacific Territories Regional Project for Sustainable Ecosystem Management (PROTEGE)	International: 4 schools in New Caledonia	Day and boarding schools (Mainly Public)	Primary and secondary (6 to 18 years)	Lunch (including entrée, main and dessert)	Monday, Tuesday, Thursday, Friday	During the school year	School	Primary school: Fixed Secondary school: Student decides

	Northern Province Boarding School Feeding Program	NA	Public boarding schools	Primary and secondary (grade 1-9)	Breakfast, lunch, dinner	Monday-Friday (breakfast, lunch) Sunday-Thursday (Dinner)	During the school year	School	Student decides
Palau	Food Service Program	National	Public day schools	Primary and secondary	Breakfast*, lunch	Monday-Friday	During the school year	School	Fixed
PNG	Boarding School Feeding Program	National	Boarding schools	Secondary	Breakfast, lunch, dinner	—	During the school year	School	—
Solomon Islands	Boarding School Feeding Program	NA	Boarding schools	Primary and secondary	Breakfast, lunch, dinner	Monday-Friday	During the school year	School	—
Timor Leste	School Lunch Program (Programa Merenda Escolar)	National	public and private day schools	Preschool, primary and secondary (grade 1-9)	Lunch	Monday-Friday	During the school year	School	—
Vanuatu	Kaikai Local, Kaikai Healthy program	1 school	Day and boarding school	Secondary school	Day students: Lunch Boarding students: Breakfast, lunch, dinner	Day: Monday-Friday Boarding: Monday-Sunday	During the school year	School	Fixed
	Baldwin Lonsdale Memorial School and Ambaebulu Junior Secondary School farm to school project	2 schools	—	—	—	—	During the school year	School	—

Table 4. Types of food provided, menu development and food procurement (✓ indicates yes, X indicates no, ‘-‘ indicates not available)

Country	Name	Menu food groups/items Requirement to include local foods	School feeding policy	Use of Nutrition Guidelines	Nutritionist/ Dietitian involved	Food sources	Contract arrangement with farmers
FSM	ECE School Feeding Program	Fruits and vegetables: banana, pineapple, sour sop, sliced peaches, coconut, squash, spinach, papaya, cabbage, cucumber, bell pepper, kang kang. Roots and tubers: taro, yam, breadfruit. Cereal: rice. Dairy: milk. Animal protein: chicken, sardines, fish, mackerel. Other: coconut milk Requirement to include local foods: ✓ YES, 2x local foods must be included in the menu each week	✓	✓	✓	Previously: Community and family gardens Currently: Local market	Informal
	Secondary School Feeding Program	Foods Unknown Requirement to include local foods: X NO, Sources local food, but not a requirement	✓	✓	✓	—	Informal
Fiji	Maritime Islands boarding school feeding program	Foods Unknown Requirement to include local foods: ✓ YES, Under traditional governance system*	X	X	X	School garden, local community and store	Informal
	Free Milk Initiative	Dairy: milk. Cereals: Weetabix Requirement to include local foods: ✓ YES, Milk must be supplied by local dairy processing company (100% Fiji owned, sourcing milk from 350 local farmers).	✓	NA	—	Local dairy	Formal
	Cicia Island High School feeding program	Vegetables: rou rou, slippery cabbage, coconut, cabbage, spinach. Roots and tubers: cassava, potatoes, taro, sweet potatoes, yams. Animal protein: fish, canned meat or fish. Cereals: rice, noodles, flour. Other: coconut cream, dhal Requirement to include local foods: ✓ YES, Under traditional governance system*	X	—	—	Community/ local farmers, school gardens, store	Informal

French Polynesia	Pacific Territories Regional Project for Sustainable Ecosystem Management	Foods Unknown Requirement to include local foods: ✓ YES, 20-35% of food must be sourced locally	✓	✓	✓	Local farmers	—
Kiribati	Kiribati Government Senior Secondary School Student Lunch	Vegetables: green, leafy vegetables. Roots and tubers: not specified. Dairy: milk. Animal protein: eggs, meat poultry, fish. Other: fruit juice, salt, sugar, water. Requirement to include local foods: Unknown	—	—	X	—	—
Marshall Islands	School Lunch Program	Fruit: canned fruits and pineapple, fresh banana, apple, orange, papaya. Roots and tubers: breadfruit. Cereals: white rice, spaghetti. Animal protein: chicken, pork, fish. Requirement to include local foods: ✓ YES, 1x local food must be included in each meal	✓	X	✓	Local market, store, farmers, school garden	Informal will be formal in future
	School Lunch Program	Fruits and vegetables: orange, apple, frozen vegetables. Roots/Tubers: not specified. Cereals: white bread, white rice. Animal protein: chicken, tinned tuna. Other: Milo, fruit juice, cordial, biscuits, Nutella Requirement to include local foods: X NO	✓	✓	✓	Store	—
New Caledonia	Pacific Territories Regional Project for Sustainable Ecosystem Management	Foods Unknown Requirement to include local foods: ✓ YES, 20-35% of food must be sourced locally.	—	✓	✓	Encouraged to source from local farmers	—
	Northern Province Boarding School Feeding Program	Foods Unknown Requirement to include local foods: X NO	✓	✓	✓	—	—
Palau	Food Service Program	Vegetables: Legumes, pulses, nuts, leafy vegetables, other vegetables. Fruits: not specified. Roots and tubers: not specified. Cereals: not specified. Dairy: milk. Animal protein: eggs, meat, poultry, fish Other: oil, salt, sugar, water, lemonade. Requirement to include local foods: X NO	?	✓	✓	—	—

Solomon Islands	Boarding School Feeding	Foods Unknown Requirement to include local foods: Unknown	X	X	X	—	—
Timor-Leste	School Lunch Program (Programa Merenda Escolar)	Vegetables/pulses: beans, cassava leaves, taro greens, leafy vegetables, tofu, cabbage, potatoes, legumes, pulses, nuts. Root and tubers: not specified. Cereals: unfortified and fortified white rice, instant noodles, grains (not specified). Animal protein: fish, eggs, meat, poultry. Dairy: milk. Other: sugary tea, oil, sugar, salt. In-kind meals provided by Care International when needed: fortified rice, pinto bean, fortified oil, fish powder and peanuts Requirement to include local foods: ✓ YES, 75-90% of foods must be sourced locally	✓	✓	✓	Local farmers, agriculture shops, markets	Informal
Vanuatu	Kaikai Local, Kaikai Healthy program	Fruit: bananas, papaya, pineapples. Vegetables: not specified. Roots and tubers: root crops, potato etc. Cereals: Local bread. Animal protein: fish, egg, poultry or meat. Other: local jam, lemon leaf and other local tea Requirement to include local foods: X NO, Sources local food, but not a requirement	—	X	✓	Local farmers, local fisheries, local bakery, store	—

* Requirement under traditional governance systems by village leaders or chiefs. This includes no set amount, but the inclusion of local foods through investing in the school garden or the use of land from traditional leaders to grow foods to supply to the boarding school feeding program. A part of this includes in-kind local produce provided by family or community as a way of contributing to community. Please note programs with no information identified are not included in this table.

7.1.2 School gardens

The use and scale of school garden programs also varied based on program. The main use of school gardens was 1. agriculture education, 2. consumption, and 3. generate income. Gardens were identified as being used in Primary (n= 4), Middle (n= 1) and Secondary (n= 5) year levels, in both public and private, as well as day and boarding schools.

Four of the school garden programs used produce to supplement school feeding programs on varying scales. The others distributed the yields of the gardens to students in different mechanisms including produce either given to students, teachers, or families to take home, and/or used in cooking classes.

Seedlings for the gardens were predominately sourced from the Ministry/Department of Agriculture or Forestry (n=4) or donated by the local farmers, community, or Taiwan Technical Mission (n=3). Respondents from 2 countries noted that this is not a sustainable model and increases reliance on these systems. This may be because this system does not foster local economies or SMEs to provide these. Respondents also noted that the seeds provided are not open pollinated, and therefore programs are unable to save the seeds for planting in the next season. Two garden programs have an intention to create a self-sustaining seed saving model.

Local farmers were involved in two main ways, including 1. guest visit to schools, providing education to students involved in the garden or 2. educational school excursion to local farms.

School garden funding streams were limited (n=6), timebound and dependent on external donors. Funders included the Global Environment Facility, local non-government organisations with international donors, the Ministry of Agriculture, the Canadian High Commission, the United Nations Development Programme, the US Embassy, the United States Department of Agriculture, and the Department of Foreign Affairs and Trade Australia.

Only 4 respondents provided information about the sufficiency of funding, with 3 reporting this was sufficient and 1 insufficient. A key challenge to funding was limited funding timeframes. This suggests that school gardens may not be supported through long term government or institutional funding, which poses a risk to sustainability. However, there are examples of strong funding models. The Commonwealth of Northern Mariana Islands School Garden Project indicated sufficient funding was available and had a strong funding model that was not reliant on government grants. This allowed for greater autonomy in shaping the program's direction and guaranteed consistent funding.

The characteristics of the school garden programs are described further in Tables 5 and 6.

Table 5. School garden programs identified with scale, type of school and year levels.

Country	Name	Scale	Type of school	Year Levels
Cook Islands	Cook Islands School Garden Program*	Regional: 12 schools in Rarotonga, 2 schools outer islands	—	Primary and secondary
FSM	School Garden Program*	—	—	—
Fiji	Green Schools Program*	2 schools: Maritime Islands	Public boarding schools	Primary

	TKC Gardening Pilot Project	1 school	Public day school	Secondary
	Cicia Island school agriculture program*	1 school	Boarding and day school	Secondary
Marshall Islands	School Learning Garden Program*	Local: plans for national	Day schools	Primary and secondary
CNMI	School Farming Project*	Local	Public and private day schools	Middle (10-12y years)
Palau	Horticulture & Nutrition Enhancement Project	Not clear	—	—
PNG	Marobe School Gardens Project*	Regional: Lae district, 16 schools	Day and boarding schools	Primary and secondary: Grades 5 to 12
Samoa	Apia Primary School Kitchen Garden Project	Not clear	—	—

**Indicates currently active*

Table 6. Overview of school gardens (✓ indicates yes, X indicates no, '-' indicates not available)

Country	Name	Produce grown	Focus on local foods	Garden use	in curriculum	Local farmers involved
Cook Islands	Cook Islands School Garden Program	Bok choy lettuce, beans, cucumber, corn, eggplants and tomatoes	✓	<ol style="list-style-type: none"> 1. Education (Agriculture and environment/climate change resilience) 2. Consumption 3. Generate income/fundraise (sell the produce at market stall or food basket at school for either donation or cheap price) 	X	X
FSM	School Garden Program	-	-	<ol style="list-style-type: none"> 1. Education 2. Consumption 	-	-
Fiji	Green Schools Program	Cassava, taro, taro leaves, pineapple, paw paw, pumpkin leaves, slippery and Chinese cabbage, tomato, eggplant, capsicum, lettuce, green beans, cucumber	✓	<ol style="list-style-type: none"> 1. Food consumption (produce is provided to school feeding program for student consumption) 2. Generate income (excess crops sold or bartered to community) 3. Education (connect students to culture and land) 	X	✓
	TKC Gardening Pilot Project	Lemons, mandarins, rose apple/Kavika, red Fijian papaya, rambutan, bananas, lobi lobi fruit, pineapples, moringa, bele, tubers, cassava, legumes	✓	1. Education for agriculture students (seedlings, propagation, mulching, agroforestry, sustainable planting with emphasis on "local foods are best")	NA (pilot)	✓
	Cicia Island High school agriculture program	Taro, cassava, rou rou, slippery cabbage, taro leaves, fern, sweet potatoes, yams, coconut, cabbage, spinach	✓	<ol style="list-style-type: none"> 1. Education for agriculture students 2. Food to supplement school feeding program 	✓	

Marshall Islands	School Learning Garden Program	Eggplant, cucumber, pumpkin, bananas and Chinese vegetables – mustard greens, bok choy, pandanus, breadfruit, sugar cane, pineapple, papaya, bele	✓	<ol style="list-style-type: none"> 1. Education (used to teach language, arts, culture, science, numeracy, agriculture, food security) 2. Consumption (produce sent home with students and teachers, long term plan to supplement school feeding program - policy needs to change for this to happen) 3. Cooking (cooking contest with students & nutrition club and cooking demonstration as a part of teacher training) 	✓	✓
CNMI	School Farming Project	Yam, cassava, taros, sweet potato, long beans, Leafy greens (bok choy, cabbage, Chinese cabbage, cucumber, eggplant, chili pepper, pumpkin, squash + seasonal fruit trees (banana, papaya, dragon fruit, guava, pomegranate	✓	<ol style="list-style-type: none"> 1. Education 2. Consumption 	X	✓
Palau	Horticulture & Nutrition Enhancement Project	–	–	<ol style="list-style-type: none"> 1. Education 2. Consumption (produce supplements school lunch program and used in cooking classes to train school cooks) 	–	✓
PNG	Morobe School Gardens Project	Tomato, pumpkin, corn, sweet potato, taro, pak choy, mung bean, Chinese cabbage, soybeans, long yard beans, belle, Chinese cabbage, eggplants, taro, sweet potatoes and guava was the main fruit. <i>Poultry was established in some schools.</i>	✓	<ol style="list-style-type: none"> 1. Generate income 2. Consumption (produce used to supplement student lunch in some boarding schools) 3. Education (implemented into curriculum) 	✓	–

Please note programs with no information identified are not included in this table. The Horticulture & Nutrition Enhancement Project in Kiribati has also been removed from the table as only local farmer involvement is known (answer: yes).

7.1.3 'Other' activities

The 'other' school food provision activities were identified in French Polynesia (Ressources Alimentaires et Santé aux Australes (RASA), in one secondary school, although not currently active), New Caledonia (Pacific School Food Lab, current and used in several public, private middle and high schools), Papua New Guinea (Capacity Assessment School Meal Project in 4 local primary and secondary boarding and day schools, not currently active) and Solomon Islands (Local Kai Kai Project, no further details on currency, scale/scope identified). Although not identified as school feeding or garden programs, these 'other' programs involve and focus on varying school food provision activities. For example, in PNG the assessment identified the current capacity for meal provision and agriculture production with next steps to inform the design and implementation/pilot of a SMP. This provides valuable insight into the potential to develop a school feeding pilot in PNG. The main mission of the Pacific Food Lab in New Caledonia is to sustainably increase the share of local raw, processed and cooked products in the plates of New Caledonians, to generate more economic, social and environmental added value. Currently, they are managing several school food provision related projects, one of which is focused on developing short distribution channels between schools and producers, by promoting the creation of a supply network between schools and the local agricultural basin.

7.1.4 Challenges, successes and opportunities of SFP

During the key informant interviews, stakeholders were asked to describe any significant challenges faced in relation to the program or activity they were involved with. During this discussion, stakeholders were further questioned about any challenges for the inclusion of local, fresh foods in the program or activity.

Common challenges identified were in relation to:

- Funding and finance
 - including, limited budget/funds for capacity building, M&E, providing nutritious meals, and to upscale programs, food inflation & high costs of local foods, delayed funding instalments, economic consequences of Ukraine war, lack of investments from institutions, and regional budget constraints
 - For example, a stakeholder from Nauru explained that the price of fresh and local vegetables was a barrier to including local, fresh foods in the school feeding program. A stakeholder from Timor-Leste explained that gaps in the budget and delayed funding instalments presented a significant challenge for schools. This results in periods at the beginning of the school year where schools delaying feeding programs, and students are not provided with a meal.
- Staff capacity
 - including, low staff numbers and capacity, lack of program motivation or leadership/driver, limited staff food literacy skills, limited qualifications, or lack of staff training and/or professional development opportunities on agriculture/nutrition/menu guidelines, and poor caterer adherence to nutrition guidelines
 - For example, a stakeholder from Papua New Guinea explained that school kitchen staff responsible for preparing meals don't always have qualifications in cooking and/or have limited skills in planning and preparing nutritious and safe meals
- Environmental conditions

- including, water security and/or management, climate conditions and changes e.g., king tides, saltwater contamination of soil, disaster preparedness, and natural disasters e.g., cyclones, drought
- For example, a stakeholder from Vanuatu explained that a logistical hurdle was the recent impacts from a cyclone on the food supply chain, which meant they had to look elsewhere for food supply
- Agricultural methods, conditions, processes and equipment
 - including, changing a mentality from synthetic fertilizers towards organic farming, soil management, limited availability of open pollinated seeds and inability to save seedlings, and availability of agriculture inputs e.g. feeds, farming equipment and mechanization
- Primary production
 - including, limited availability and variety of local foods (fruits, vegetables, meat), limited farmer capacity to grow sufficient quantity of local foods, limited number of farms/farm size, and sustainability of local food supply
- Covid-19
 - including, Covid-19 disruptions, school closures, and farms not being looked after
- Governance and policy
 - including, lack of supporting laws and policy, lack of the inclusion of traditional governance systems, and restrictive health and safety regulations for inclusion of local foods
- Food safety & hygiene
 - including, lack of food safety and hygiene resources e.g., safe water and kitchen facilities
- Food culture, perceptions, and preferences
 - including, changing perceptions on local foods, preparation of local foods in meals in a non-traditional way, low acceptance/familiarity of vegetables and parents' expectations that all students have the same meal/snack options
- Western food system
 - including, reliability on imported foods, preference for imported foods due to taste, convenience, appearance and affordability, and food culture not aligned with local production
- Geographical Location
 - including, regularity of shipping food to remote locations, shipment delays, shipping and transport of food, food distribution costs to remote schools and tele-communication and support for remote/rural areas
- Food processing, storage and power facilities
 - including, insufficient power (for fridge), food storage capacity, low shelf life of local food, lack of simple processing techniques/resources to prolong shelf life and storage facilities for farmers to avoid waste management
- Stakeholder/community engagement and collaboration.
 - including, limited external partnerships to support funding and resource gaps, engaging wider community, and inconsistent/competing commitments for village caterers
- Planning and logistics
 - including, project team organisations and bureaucracies , lack of monitoring and evaluation resources, ability to have a structured value chain with consistent food

availability, irregular distribution/coverage of school meals, and lengthy procedures/processes resulting in delayed payment to vendors/caterers

Successes were also identified and varied across the countries. Common responses included:

- Increased interest and participation in gardening
- Collaboration and partnerships between members of the school community, including parents
- Improved student attendance at school and educational outcomes
- More nutritious menus
- Renovated infrastructure
- Providing a holistic approach to health
- Improved food security
- Leadership and capacity building for women
- Use of traditional farming systems
- Development of policy and guidelines
- Economic development/building local economies
- Consistent funding source
- Independence in management
- Teachers with agricultural knowledge

Opportunities to include local foods in school food provision programs were explored through two main questions 1. “What would you like to see in the future to improve the inclusion of local foods” during stage 1 of interviews and 2. “What opportunities are there to optimising the existing procurement of local foods into school food provision programs” during stage 2 of interviews.

The responses were context dependent and vary between each country with key themes of opportunities including:

- Increase school meal purchasing options from underutilized local smallholder farmers, such as family and community farmers.
- Supplement school meal programs with school garden produce, where able. It was reported that this approach may be better suited to boarding schools or day schools with existing agriculture programs.
- Scaling up school gardens that are already supplementing school meals e.g., increasing crop volume, crop diversity (fruits and vegetables) and accessing available land at schools.
- Explore local aquaculture industries as a purchasing option for school meals or explore aquaculture development in school agriculture programs.
- Explore raising poultry (used for eggs and meat) on school grounds at boarding schools or day schools with existing agriculture programs to supply to school meals.
- Diversify funding options to supplement government funding for school meals
- Using different farming technologies in school gardens to address soil or climate challenges e.g., airpod or tower gardens, container gardens, wicking garden, hydroponics.
- Improve partnerships and collaboration between traditional leaders (village heads), schools, ministries, universities and developing partners.
- Invest in educating youth on the importance of local foods.

- Develop supportive policy for the inclusion of local foods.

7.1.5 Sustainability

During the KIIs, stakeholders were asked if they could foresee the program to be sustainable moving forward. Only six respondents answered this question, however all believed that programs were sustainable. Some stakeholders provided examples of what is needed to be sustainable, for example a respondent shared: *'It is sustainable if meal value/budget increases & more training is provided to caterers.'* Another stated *'There is optimism and hope, and a critical part of this involves targeted community/village support and empowerment as it will greatly influence their level of commitment to the school'*. One stakeholder also noted that if no other support systems exist, the village catering component and nutrition face the threat of being compromised.

7.2 Objective 2 Key findings

7.2.1 Policy overview for all countries

Different policy and strategic documents related to food, nutrition and agriculture were reviewed for all 22 countries to understand the current policy landscape. This was completed by searching relevant policy areas in each country and indicating if a policy existed or not. Questions used during the KII also facilitated discussion about the policy environment.

Information gathered about national and local level policies was limited and varied depending on the respondent and their knowledge on the topic. Some respondents were able to recall specific details of national and/or local policies pertaining to school food and other related policies, such as national nutrition and national food security policies. However, the vast majority were either unaware of existing policy, or had some knowledge, but were unable to recall specific details.

School feeding policies were identified for 8 school feeding programs (FSM n= 2, Fiji n= 1, French Polynesia n= 1, New Caledonia n= 1, RMI n= 2, and Timor-Leste n= 1) (Table 4). The need to develop school food-related policy was a focus of discussion in many KII. Some respondents indicated a lack of supporting policy as a problem/inhibitor. A respondent from FSM noted *"Laws and policy need to be created to build capacity, funding, and manpower. Currently the program is a 'shark without teeth'.* However, there was a strong desire to develop and implement policy, and knowledge of related policy development identified. Respondents also mentioned the existence of informal agreements and expectations surrounding school food, despite the absence of official school food policies.

A range of strategies were discussed to support policy effectiveness, including monitoring and enforcement, adapting policy to the community context, and integrating traditional governance systems alongside policy. The high adherence to Timor Leste's school feeding policy (minimum 75% local food sourcing) was because of various factors, such as consequences for non-compliance and the cultural importance of following the law among meal providers. *"School meal providers are very disciplined on following the law"* (respondent from Timor Leste). However, it was also observed that certain parts of Timor Leste might encounter difficulties in fulfilling the 75% local sourcing requirement because of variations in farmer capacity, growing conditions, and the expense of transporting food over long distances. To ensure the policy's feasibility

throughout the country, it was recommended to customize it for individual communities or allocate additional funds to areas with higher food procurement expenses.

Furthermore, a participant from a rural Fijian boarding school highlighted the need to customize policies based on the local context and integrate traditional governance systems. *“One of the main reasons programs fail to work or to include local foods is the lack of integration of traditional governance systems alongside government and policy”* (respondent from Fiji). The importance of engaging and working together with traditional leaders and chiefs was underscored, recognizing their powerful influence and the esteem they hold in the community. The rural boarding school feeding programs, despite the absence of a formal local or national policy, reflected the community’s traditional governance values by including nutritious local produce. To enhance the feeding program, the schools invested in growing local foods in the school garden.

An overview of the polices is provided in Table 7.

Table 7. Policy, strategy, and action plan available within 22 Pacific Island countries

	Nutrition and/or food security policy	NCD policy or master health plan	School aged student health or nutrition policy	Agriculture and/or aquaculture policy
Cook Islands	√ ¹	√ ^{2,3}	X	√ ⁴
FSM	√ ⁵	√ ⁶	√ ⁷	√ ⁸
Fiji	√ ⁹⁻¹¹	√ ¹²⁻¹⁴	√ ¹⁵⁻¹⁹	√ ²⁰⁻²⁴
French Polynesia	X	X	X	X
Guam	X	√ ²⁵	√ ²⁶	X
Kiribati	√ ²⁷	√ ²⁸	√ ²⁹	√ ³⁰⁻³²
Marshall Islands	√ ³³	√ ³⁴	√ ^{35,36}	√ ³⁷⁻³⁹
Nauru	√ ⁴⁰	√ ^{41,42}	√ ⁴³	√ ^{44,45}
New Caledonia	X	√ ⁴⁶	X	X
Niue	√ ⁴⁷	√ ^{48,49}	X	√ ^{50,51}
CMNI	X	X	X	X
Palau	X	√ ⁵²	√ ⁵³	√ ⁵⁴
PNG	√ ^{55,56}	√ ⁵⁷	√ ⁵⁸	√ ⁵⁹
Pitcairn Islands	X	X	X	X
Samoa	√ ^{60,61}	√ ^{62,63}	√ ^{64,65}	√ ⁶⁶⁻⁷⁰
Solomon Islands	√ ⁷¹	√ ⁷²	√ ^{73,74}	√ ^{75,76}
Timor-Leste	√ ^{77,78}	√ ⁷⁹	√ ⁸⁰	√ ^{81,82}

Tokelau	X	√ ⁸³	X	√ ⁸⁴
Tonga	√ ^{85,86}	√ ⁸⁷	X	√ ⁸⁸⁻⁹¹
Tuvalu	√ ⁹²	√ ⁹³	X	√ ^{94,95}
Vanuatu	√ ^{96,97}	√ ⁹⁸	√ ⁹⁹	√ ¹⁰⁰⁻¹⁰⁴
Wallis and Futuna	X	X	X	X

Please note the associated references for these sources are provided in the report reference list (section 10.1).

7.2.2 Policy deep dive in subset countries

A deep dive of policy was undertaken in the subset countries to explore the enabling environment of school food provision and the integration of local agriculture. An overview of policies and/or relevant guidelines that are related to school age children’s nutrition, school meals, and local agriculture/aquaculture in schools in these countries is presented in Table 8. The associated links are provided in section 9.4. Policy documents for New Caledonia were not included because of the difficulty in navigating and retrieving documents in the French language.

Most of the policy documents referred to general nutrition issues in each country, with strategies, goals, or recommendations outlined to combat malnutrition. Policy documents addressed nutrition issues in school-aged children, but did not explicitly provide schools with strategies, goals, or recommendations to implement. Policy documents highlighted aspects of school feeding, primarily in countries where there was already an SMP and a distinct school meals policy.

Most of the policies, 13 out of 38, were directly associated with school feeding programs in boarding schools or national school feeding programs. Despite having the highest number of identified policies (n=14), Fiji had only four policies that addressed school meals. Three focused on boarding schools, while one was about an outdated national free milk initiative. Despite having fewer policies identified (4) for FSM, RMI (5), and Timor-Leste (6), each country had a distinct school meals policy that pertained to their respective regional (FSM/Pohnpei) and national (RMI and Timor Leste) school meal programs. Only one out of the nine identified policies for Vanuatu focused on school meals, specifically by banning sweet drinks in schools.

The reviewed policy documents showed minimal incorporation of local agriculture, aquaculture, and forestry in schools. When this existed, this was in relation to the implementation of gardens or agricultural curriculum in schools.

Table 8. Policy content covered in relation to local agriculture/aquaculture, nutrition and school meals (deep-dive countries).

Policy document and year of publication	Aspects related to school aged nutrition/environments	Aspects related to school meals	Aspects related to local agriculture/aquaculture in schools
Fiji			
Youth in Agriculture 2022-2027	Goal to strengthen food and nutrition security by promoting youth engagement in the agri-food system.	None identified	Promotes school agriculture training and supports MoE with gender-sensitive school gardening including livestock, school competitions, selling excess produce, assessing value chain opportunities.
Ministry of Health and Medical Services Strategic Plan 2020-2025	Current initiatives offer WASH services and NCD testing at schools.	None identified	None identified
Agriculture Sector Policy Agenda 2020	None identified	None identified	Recommends that MoA/MoE cooperate to introduce agricultural science laboratory in every school and agricultural education be taught from high school level. Discusses, investment into the FFS program.
5-Year Strategic Development Plan 2019-2023	Some goals include nutrition and food security, particularly for school students through healthy canteen menus and achieving minimum dietary diversity.	Includes target to increase consumption of foods from at least 3 food groups daily in boarding school meals.	Identifies backyard/school gardening as important way of promoting local agriculture/nutritious diets. Includes targets to increase school gardens, local milk production in boarding schools and demand for diverse, nutritious, and safe food.
Policy on Distribution and Storage of Free Milk 2017-2020	Aims to promote healthy habits, food security and nutrition in school children.	The Free Milk Initiative was directed at year 1 students to receive 250ml of free milk each school morning.	Milk supplier was a Fiji owned dairy processing company, sourcing milk from 350 local farmers.
20-Year National Development Plan 2017-2036	Outlines involvement of primary, secondary, and boarding schools to be more food secure and nutrition conscious.	None identified	None identified
Policy on Food and School Canteens 2016	School canteens and food environments; outlines approved and prohibited foods within a radius of schools; outlines canteen committee and canteen compliances.	None identified	None identified
Fiji School Health Policy 2016	Mentions a service delivery about school food safety.	None identified	None
NCDs Strategic Plan 2015-2019	Recommends; nutrition label education to schools, enforce school canteen/boarding school guidelines, restrictions on hawker's licenses around	None identified	Recommendations to encourage school gardens. Outlines support to incorporate gardening into primary school curriculum.

	schools, and caterer training.		
Fiji National School Canteen Guidelines 2013	Supports policy above. Outlines healthy food selection, canteen food category systems, menu lists, recipes and food safety.	None identified	Encourages schools to link with local fruit/vegetable retailers. Principles for canteen selection includes eating more local fruits and vegetables.
Fiji Plan of Action for Nutrition 2010-2014	Outlines activities supporting implementation of the nutrition policy in schools, and the reduction of anaemia in children.	Plan for activities supporting boarding school nutrition policy and using garden produce in boarding school meals.	Activities and indicators encouraging schools to plant fruit trees, use school garden produce in canteen/boarding school meals, and coordinate Young Farmers show in schools.
National Food & Nutrition Policy for Schools 2009	Focus on compliance with canteen guidelines, food environments, nutrition curriculum, food security, food quality and safety.	Requires boarding schools provide balanced meals. Day schools do not have to provide meals to students.	All schools must have gardens/fruit trees and should link to Enterprising Education in primary schools and Agricultural Science in high schools.
National Food and Nutrition Policy 2008	Outlines strategies related to supporting Nutrition Policy for Schools (implementation and monitoring, establishing ministry links, and implementation of HPS).	None identified	Strategies for incorporating agricultural science technology in curriculum, planting fruit trees, gardening and enterprise education in schools.
Fiji Forest Policy Statement 2007	None identified	None identified	Guidelines to encourage tree planting on school grounds to teach value and utility of trees.
FSM			
FSM, National Strategic Plan of Action for the Prevention and Control of Non-Communicable Diseases, 2019 – 2024	Outlines activities to; advocate completion of school health policies, encourage school nutrition policy, provide training on value of local food, increase schools involved in HPS, monitor school age nutrition and iron status via surveys, registries, and new curriculum.	None identified	Discusses the Health Promoting Schools (HPS) program which focuses on school gardening and physical activity as national priorities.
FSM Agriculture Policy 2012-2016	Goal of achieving national food security, safety and nutritional health, and decreasing vitamin A deficiencies.	States possibility to regulate proportion of local food used in school meals.	None identified
School Hot Lunch Meals Policy 2005	Outline's role of nutritionist in guiding 'The hot lunch program'.	Outline's school lunch program details for high school students including hot lunch recommendation. Program can be extended to primary schools if they have sufficient money/resources.	None identified
National Plan of Action for Nutrition 2000-2005	Not available online	Not available online	None identified

RMI			
RMI Agriculture Sector Plan 2021-2031	Plans to link agricultural production to nutrition, including promoting proper nutrition to schools.	None identified	Encourages schools to increase gardens, tree planting and curriculum on agricultural science.
Republic of the Marshall Islands National Strategic Plan 2015-2017	Explains curriculum on nutrition and food security should be taught to all school levels.	None identified	None identified
Republic of the Marshall Islands Public School System School Meal Policy 2013	Outlines recommended serve sizes for each food category and age range. Ensures school meals meet minimum dietary recommendations.	Lunch provided for all students in day schools and three daily meals in two boarding schools. At least one seasonal local food included per day on neighbouring islands,	Specifies schools are allowed to sell produce from school gardens to vendors for use in school meals. Responsibility to ensure sustainable harvesting/use of school garden crops.
Marshall Islands Public school system act 2013	Mentions improving nutrition of school children via the hiring of a nutritionist for nutrition work in schools.	Specifies boarding schools must have SFP in accordance with standards of health cleanliness set by MoH. School Commissioner may insist any public school to have SFP.	None identified
Republic of the Marshall Islands Food Security Policy 2013	Includes the fortification of school nutrition curriculum through lessons, meals and gardening activities. Discusses undertaking micronutrient supplementation of children.	Identifies SFPs as effective safety net. States that SFPs continue to be in line with Public Law and part of national objective to ensure consumption of nutrient rich foods.	Promotes school gardens for local access to healthy and nutritious ingredients, aiming for all school graduates to know how to access and prepare healthy food.
Timor-Leste			
Unofficial Translated School Food Policy 2022	Objectives to ensure right to a healthy daily meal; reduce rates of school-age children malnourished; promote healthy eating habits among educational communities.	Outlines national SFP, inclusive of daily lunch meal. Composition of school menus includes preference of local/seasonal products.	Objectives to contribute to economic development of local farmers and ensure at least 75% of food used in school meals are produced in Timor-Leste.
Multisectoral action plan for the prevention and control of NCDs in Timor-Leste 2018–2021	Outlines activities including revising health component of school curriculum; Banning sales of junk foods in schools; and, Establishing HPSs.	None identified	None identified
National Food and Nutrition Security Policy 2014	Strategies to promote micronutrient intake in young children/ adolescent girls, develop guidelines for SFPs, improve access to safe water/sanitation at schools, and integrate nutrition in school curricula.	MoE responsible for implementing school feeding. Strategies to develop guidelines to improve SFPs and promote local/nutritious food	Strategies promote use and consumption of local nutritious food at schools, food outlets and school gardens.

		consumption at schools.	
National Action Plan for a Hunger and Malnutrition Free Timor-Leste 2014	Special attention is given to the needs of adolescents, young children, and schoolchildren, especially nutrition and stunting.	None identified	None identified
Timor-Leste Ministry of Agriculture and Fisheries Strategic Plan 2014-2020	None identified	None identified	None identified
National Forest Policy 2007	None identified	None identified	None identified
Vanuatu			
Vanuatu Non-Communicable Disease Policy & Strategic Plan 2021-2030	Incorporates Guidelines for Health Promoting Schools (HPS) and states outcomes focused on ensuring healthy school environments through sweet drink/ canteen policies/guidelines and reviewing nutrition curricula.	None identified	None identified
Vanuatu Agritourism Action Plan 2017	None identified	None identified	None identified
Vanuatu Nutrition Policy & Strategic Plan 2016-2020	Objectives to promote child nutrition and healthy school environments, implementing the Sweet Drink Policy & Healthy School Food Guidelines as a part of HPSs.	None identified	States the School to Home urban food security and nutrition awareness, gardening and cooking program is piloted in Port Vila schools.
Vanuatu National Fisheries Sector Policy 2016-2031	None identified	None identified	Fisheries curriculum in schools is an extensive part of the policy.
Vanuatu Agriculture Sector Policy 2015-2030	None identified	None identified	Directive to establish/strengthen school programs training in agricultural environments and incorporating agricultural science. Promote FFS programs to facilitate hands-on training in the agriculture sector.
Vanuatu National Livestock Policy 2015-2030	None identified	None identified	Encourages local school curriculum to include livestock farming/ management topics to foster student interest.
Vanuatu Sweet Drink Policy 2014	Focuses on enabling a healthy school drink environment to address NCD rates; increasing knowledge of students/teachers; restricting/encouraging certain drinks in school environment.	Highlights actions linked to SFPs on banning sales of sweet drinks, gifted free sweet drinks at school events and sweet drinks brought by students/families to school grounds.	None identified
Vanuatu Forest Policy 2013-2023	None identified	None identified	Objectives to introduce forestry in school curricula, train teachers on forestry issues in schools, and develop forestry related training materials for school use.

Vanuatu Plan of Action for Food and Nutrition 1999-2003	Outlines aspirations that the DoH will lead programs on home/school gardens and well-balanced diets.	None identified	Brief section on DoE undertaking a 'health and nutrition in agriculture' unit in local school.
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Please note: HPS: Health Promoting Schools, SFP: School Feeding Program, FFS: Farmer Fields School, MoA: Ministry of Agriculture, MoE: Ministry of Education, DoH: Department of Health. The links to these policies are available in Section 9.4.

7.3 Objective 3 Key findings

Objective 3 utilised KIIs, searching for, and collating, secondary data and a virtual workshop. In total, 13 people participated in this round of data collection. Seven KIIS with 12 respondents were conducted and one respondent completed a Qualtrics survey. Respondents provided information on behalf of five PICTs (FSM, Fiji, Marshall Islands, Timor-Leste, and Vanuatu). No information from New Caledonia was not provided due to lack of participant response.

The respondents in the study comprised of Pacific based representatives from government ministries and/or departments, government programs, non-government organisations (NGOs), and members from country or regional organisations, and programs. All respondents were either involved (currently or in the recent past) directly with some type of school food provision activity, or they had considerable insight into programs in particular countries due to other indirect work experience. Due to the remote nature of data collection, it was difficult to engage with local farmers and/or farmer organisations, limiting the volume of information gathered in this stage from farmers perspectives/experiences.

7.3.1 Perceptions on home-grown feasibility

One key question of the interviews related to feasibility of models. Table 9 outlines if respondents believed that a farm to school (i.e., homegrown) model was feasible for school feeding programs in their country, what would be needed to ensure this was feasible and what a preferred arrangement with farmers could look like. All respondents indicated that a farm to school model would be feasible, however, what would be needed to make this feasible and preferred purchasing arrangements with farmers varied indicating the importance of a context specific model.

Table 9. Stakeholder perceptions of feasibility of a farm to school model.

Country stakeholder	Is a F2S model feasible?	What would be needed to make this feasible?	Preferred purchasing arrangement with farmers (informal vs formal)
FSM	Yes	<ul style="list-style-type: none"> Partnerships Funding Capacity building 	Formal contracts and partnerships.
Marshall Islands	Yes	<ul style="list-style-type: none"> The scale of how much food is sourced locally needs adapting to growing capabilities at each atoll Innovative ideas to overcome challenging growing conditions Strengthening partnerships between schools, airline and boating companies and farmer organisations to ensure produce delivery to all atolls 	Formal. A service contract/memo of understanding detailing expectations.
Marshall Islands	To supplement, but not to be depended on.	<ul style="list-style-type: none"> Supply from both school gardens and local farmers School gardens producing bulk crop that grow well, rather than large diversity due to challenging growing conditions Partnerships and support for local farmers (both community and parent farmers) Enter into a MoU with farmers to protect the farmer 	Memorandum of Understanding to protect the farmers. Policy or contract to sustain this agreement.

		<ul style="list-style-type: none"> Schools' willingness to pay a little more for local produce Farmers to supply to tourist industry to compensate for price cut of produce when sold to schools 	
Vanuatu and Fiji*	Yes	<ul style="list-style-type: none"> Acceptance from community that it's not the path of least resistant, but the path of greatest benefit long-term Support to reduce perishability and ease of preparation of local foods Linking in already existing home-grown farming community 	Both can work well depending on the context e.g., types of land use and ownership, types of farmers. Formal arrangements may support success of farms.
Vanuatu	Yes	<ul style="list-style-type: none"> Leadership and ownership Policy and regulation Organisation on a national level Coordination and linking the schools to markets. Producing food consistently More human resources, funding and support from government 	Contract agreement with arrangements between farmers and schools.
Fiji	Yes	<ul style="list-style-type: none"> Context specific Looking into the different sectors that are providing the food products. 	Depends on community e.g. If produce is provided in kind, informal arrangements work best. If purchasing power exists, formal/semi formal arrangements are more useful.
Fiji	Yes	Not provided	N/A
Timor-Leste	Yes	Not provided	It is better to have formal arrangements.

*Interview included a participant who spoke about two countries

7.3.2 Best-Bet Models

A virtual regional consultation workshop was also held during this phase. During the stakeholder workshop, participants were asked to consider several questions. The full workshop report is available in appendix E, with a summary of key points included here.

One of the key questions asked in the workshop was what is the most feasible model for your context and why? Generally, a model based predominately, or fully on local foods was seen as ideal, but not realistic now, or for new programs. A hybrid model was suggested as being most appropriate, and a good starting point for school meals programs. The hybrid model was viewed as more likely to be successful, with an aim of moving towards integration of more local food over time. Participants discussed the need for involvement from many sectors, including the private sector to make programs successful and sustainable. Important discussion points also included that contextualised models that are community led are crucial and that a systems focus is required. Participants identified early entry points as rural schools, and private/faith-based schools, and that champions and leaders are needed from all sectors. Challenges were perceived to be linked to finance, availability of items (both low availability of foods to include and high availability of highly processed foods), and children's preferences. Links to school curriculum were also discussed, highlighting a 'whole of school' approach.

7.4 Objective 4 Key findings

While the virtual workshop is planned for mid-April 2024 and will seek to share and further discuss models and next steps, a range of opportunities to link to existing or other planned research or development projects that could be linked with a potential next phase of the research have been identified.

There are opportunities for future work based on the findings and recommendations to link with ongoing CGIAR work which has a strong focus on school meals and school food environments. In particular, the potential for capacity sharing and learning in this area through the CGIAR FRESH Initiative and the ASEAN-CGIAR Innovate for Food and Nutrition Security Regional Program are considerable. ACIAR also contribute funding to both these programs. FRESH is interested in expanding work to the Pacific Region, and through the ASEAN-CGIAR Regional Program, the Alliance is working closely with WorldFish on nutritional value of local aquatic food systems and links to school meals. This could also open links to Solomon Islands and Timor-Leste where WorldFish have offices.

There are opportunities to collaborate and partner with existing or planned school meals programs that will be implemented by Government and/or other multilateral organisations to provide research support and evidence. For example, IFAD is about to start a new program, Agricultural Investment for Markets and Nutrition in Solomon Islands and Vanuatu that includes a component on establishing school feeding in select schools as part of the demand side to stimulate agriculture value chains. IFAD have shown interest in collaborating with ACIAR to support research and evidence generating related to this, given the novelty of the approach and the need for robust evidence.

There are opportunities to collaborate and partner with GCNF on a Pacific version of the Global School Meals Survey and peer learning activities. Initial discussions are underway, but this partnership presents significant opportunities for country sharing activities and capacity building.

7.5 Learnings and limitations

While we recognise that we have not captured all the activities that are currently in place across the region, we now have a better understanding of the current state of school food provision activities. Information on school food activities was gathered using KII for all countries except for Guam, Niue, Pitcairn Islands, Tokelau and Tuvalu. For some countries multiple stakeholders have provided information on school food provision activities. While large scale (national) school feeding programs are less utilised, there are many other smaller scale activities in place, or planned for.

The current policy landscape and enabling environment for linking school food provision with local agriculture, including procurement of food from smallholders in the region has now been documented. Through stepwise consultation with stakeholders individually and collectively, clear directions on how the enabling environment and practical implementation of school food provision initiatives can be improved have been identified.

The policy mapping identified varying policy across the region. Some countries have policy that directs the use of local foods in school feeding programs, however other countries do not have any school food related policy. Monitoring and evaluation vary across the region, especially regarding scope and indicators used. In the countries that did have specific policy in place, they also incidentally had a higher number of SFP initiatives that were documented. However, while

policy was explored, the presence of implementation guides was not, and presents a future opportunity.

Some stakeholders reported inadequate funding, or other resources (e.g., human) for monitoring and evaluation. Resourcing is also reported as a barrier to school food provision activities, and the use of local foods, by numerous stakeholders. This includes financial, human, and physical resources. However, there are reports of the school food provision activities improving attendance at school, enhancing food security, improving leadership and capacity building opportunities for women, supporting collaboration with traditional landowners and local food systems, and that children are engaged with programs, indicating that there are many possible benefits.

Our understanding of the research problem has evolved over the course of the project. While we recognised that there would be complexity in school food activities when we started this work, this complexity has exceeded our expectations. This is not a problem per se but has required us to spend more time on some aspects of the project and that more triangulation was required to ensure we have accurate data. There were attempts to cross check information with other stakeholders to do this, but also a reliance on knowledge about existing initiatives from team members. Despite our best efforts to engage with stakeholders in some countries, we were not able to engage with them virtually, even when we were aware of activities. Engaging with farmers, was particularly difficult due to the virtual nature of interactions. While it is possible to develop rapport using an online meeting tool (zoom), this is generally much easier to do face-to-face. Many stakeholders commented that it would be good to have people visit to see the programs in action. One of the recommendations from this SRA is to undertake future project data collection in country as much as possible to ensure that stakeholders who may not have the opportunity to connect online, e.g., remote farmers, can have a voice.

Involving stakeholders from across the food system has provided rich data but has also presented challenges in ensuring that complete information for each school feeding activity has been documented (people tend to know about their work, but not that of others). Based on the data collected and the learnings identified in interviews, the team found it challenging to narrow down the countries of focus to a sub-set of countries for the 'deep-dive'. Stakeholders indicated there was a lot of interest in this project, and were interested in being involved, even if there were not a lot of activities underway in their country.

7.6 Partnerships

The project team partnership

The project team consisted of a committed group of individuals from The Alliance for Bioversity International and CIAT, The Pacific Community (SPC), ACIAR and DFAT, and the University of the Sunshine Coast (UniSC). For all, this was the first collaboration between The Alliance, SPC, ACIAR/DFAT and UniSC, and it has been a successful experience. The project team worked collaboratively and respectfully, ensuring that everyone had an opportunity to participate in decision making and contribute to the direction of the project. Each partner, and team member has provided a unique and valued perspective and input.

Group discussion and decision making was important to the team and was utilised for key decisions. The project team encouraged open discussion of the approach to the research. This was facilitated by shared documents, encouraging all team members to contribute comments, and then discussing at team meetings. While this process has increased the time required to make some key decisions, it has ensured that everyone can contribute, and the team carefully

considers the benefits and risks of each decision. This approach has also helped strengthen our working partnership and provides a solid foundation for future project partnerships.

Broader partnerships

Through interviews, the team has built new connections and strengthened existing ones, particularly with stakeholders from Fiji, Federated States of Micronesia, New Caledonia, Republic of Marshall Islands, Vanuatu, and Timor-Leste, who have shown great enthusiasm in participating. Speaking at the IUNS-ICN symposium presented a chance to enhance partnerships with three key stakeholders (Ms Brynn Demei, Mrs Helmutrude Iha-Sikas, and Mr Sefano Katz), who joined Dr. Burkhart and Mrs. Raneri in attending the conference and symposium. The team had a productive experience with numerous discussions, both internally and with conference attendees (refer appendix D for presentation details). Several opportunities for collaboration have also been identified with the CGIAR, GCNF, SPC and IFAD. GCNF is currently working on the next iteration of the Global School Meals Survey and has enlisted the assistance of the SRA team to identify focal points in the region, showcasing the group's connectedness. Team members also leveraged their wide range of regional and global networks, such as the SMC and GCNF, many of whom have shown positive interest in the research results and significance for furthering the school food agenda in the Pacific Region. In addition, the combination of key informant interviews and the virtual consultation workshop provided an opportunity to identify potential in-country partners in various Pacific countries that are actively engaged and willing to further school food provision initiatives in their respective countries. Many of these are government department representatives, but also from universities and NGOs. This approach has helped strengthen working partnerships and provides a solid foundation for future project partnerships, as outlined in the project recommendations.

8 Impacts

8.1 Scientific impacts – now and in 5 years

As this is an SRA, the immediate impacts of this work are modest. This SRA provides a more comprehensive picture of the current school food activities in the expansive Pacific Islands region. Prior to this work, there has been no such documentation. Given the global attention around school meals, this is a significant output for the region. The database developed and shared on the PSFN website provides a platform to facilitate knowledge sharing. The knowledge obtained from KII, a systematic literature review, secondary data compilation, and an online workshop enhances our understanding in this field, which was lacking at the beginning of this project. This information will be collated into two manuscripts for publication and a 3 – 4 page research brief, addressing a key evidence gap for the Pacific Islands region. The scientific knowledge collected offers a promising foundation for transforming school meals in the next 5 years, promoting healthier options, supporting local producers, and boosting educational outcomes. Encouragingly, the insights generated in this SRA are already being applied in other initiatives, such as providing technical recommendations to the Government of Kiribati for implementing their National SMP pilot.

8.2 Capacity impacts – now and in 5 years

The SRA has facilitated capacity sharing and learning between individuals from the region. The SRA has also identified capacity gaps within school food provision programs in the region, and opportunities to build capacity. One example of capacity sharing is the IUNS symposium, held in Japan in December 2022 (please see appendix D), where three individuals were supported to develop, submit, and present on their school food related work activities. Mrs Raneri and Dr Burkhart assisted the stakeholders to develop their abstracts, provided feedback on presentations and chaired the symposium. Throughout the SRA the research team has actively supported stakeholders to network, both within the Pacific Islands region, and globally, for example with organisations like the GCNF. Stakeholders who participated in the virtual workshop were able to forge connections with others and enhanced knowledge of school meal benefits and models. Another capacity impact is that of the project research assistants, Ms Bridget Horsey (current PhD candidate) and Ms Jenna Perry (enrolling in PhD in 2024). Both Ms Horsey and Ms Perry have played a pivotal role in the success of this SRA and have been supported by the broader project team to further build their research and communication skills. Ms Horsey and Ms Perry, then in turn, have led and supported other team members who have assisted with aspects of the project.

8.3 Community impacts – now and in 5 years

The potential of a regional scoping study of this nature helps to identify positive future impacts if the findings and gaps can be addressed through a future follow-up intervention. The dissemination activities that are planned after the SRA end date, including at a FAO SIDS event, the GCNF Forum, SMC events and a PSFN webinar will allow for advocacy and knowledge sharing with critical stakeholders interested in the results to inform their development programs and, specifically, future school food provision initiatives.

8.3.1 Economic impacts

The results of this SRA will not have direct economic impacts. However, if the SRA facilitates a full project, and influences the effective design of future school food initiatives, then there are broad economic impacts to be incurred. Potential impacts here are in the potential to link local farmers to school markets, and associated livelihood impacts. There could be also spill over effects for farmers in helping them identify other markets e.g., tourism, hotels, hospitals. Globally SMP are recognised as increasing school attendance and educational outcomes, ultimately translating into economic impacts on communities (WFP, 2022). As SMP can also ensure access to a nutritious meal (or meals), it is plausible that in time, some of the significant nutrition related health concerns in the Pacific Islands region (overnutrition, undernutrition and micronutrient deficiency) could be reduced, ultimately reducing the economic burden of diet-related non-communicable diseases.

8.3.2 Social impacts

The results of this SRA will not have direct social impacts. However, if the SRA facilitates a full project, and influences the effective design of future school food initiatives there is considerable potential for social impacts. When children eat a more nutritious diet, they have better personal, cognitive, and physical development. Well-designed and contextualised SMP can support communities and children to be more aware of local foods, enhancing community cohesion, and strengthening local food systems.

8.3.3 Environmental impacts

The results of this SRA will not have direct environmental impacts. However, if the SRA facilitates a full project, and influences the effective design of future school food initiatives there is potential for environmental impacts through strengthened local food systems, conservation and use of local food biodiversity, less food waste/loss, reduced reliance on food imports, and use of more climate-friendly school meal practices.

8.4 Communication and dissemination activities

The project has been communicated and findings disseminated in several ways. These are briefly described here.

The International Union of Nutrition Sciences (IUNS) International Congress of Nutrition (ICN) Symposium (Tokyo, December 2022)

This Symposium brought together 4 presentations to showcase the SRA and school food activities within the region. The presentations included a focus on the SRA, the Morobe Gardens project in Papua New Guinea, the Palau School Food Program and the Green Schools program in Fiji, with abstracts and images provided in Appendix D. Feedback from the symposium was positive, with the newly formed Federation of Oceanic Nutrition Societies (FONS) indicating interest in assisting with the organisation of a similar webinar series. The symposium was also showcased in the ACIAR blog/partners magazine ([see here](#)).

School Meals and Food Systems: Rethinking the consequences for climate, environment, biodiversity and food sovereignty

The Pacific School Food Network was invited to provide a case study for the SMC Diet and climate school meals white paper case study. Dr Sarah Burkhart provided a case study on school food in the Pacific for a White Paper commissioned at a Ministerial Meeting of the International School Meals Coalition, by Minister Mariam Almheiri (Minister of Climate Change and Environment in UEA, for COP28). The White Paper outlines current evidence, best practice, and recommendations on sustainable school meals both in high and low/middle income countries and mentions the work undertaken in this SRA. Team member Dr Danny Hunter is a lead author on this publication. [Available here.](#)

Conference presentations

The overall intention of the SRA and progress to date was shared during presentations at the following events:

- Joint Nutrition Societies of New Zealand and Australia Conference. Auckland, December 2023. Dr Sarah Burkhart presented a keynote on *'Feeding our future – school food and local agriculture in the Pacific'* (incorporating findings from the SRA) and Ms Jenna Perry delivered an oral presentation, *'Exploring school food provision programs and links to local foods in Pacific Island countries'*, on findings from the SRA.
- Society for Nutrition Education and Behaviour Annual Conference. Washington DC, July 2023. *'Nurturing young food citizens of the future through policy, systems and environmental changes'* presented by Dr Sarah Burkhart.
- Bringing Pacific Voices to FAO Headquarters. *'School food and nutrition education in the Pacific Islands'*. Rome, Italy. 20th May 2023. Presented by Dr Sarah Burkhart

The virtual project workshop (January 2024)

A virtual workshop was held in January. The aims of this workshop were to share a summary of SRA findings, discuss what models may be suitable for school meals programs in the Pacific and discuss next steps in this work, including ideas for dissemination.

PSFN links (webinar/specific details of this)

The School Food Activity database is live and freely available on the PSFN website (<https://www.pacificschoolfoodnetwork.org/projects>). The PSFN shared initial findings with their mailing list and also presented some of the initial findings in the International School Meals Day webinar (March 2024).

Upcoming activities

The research team have committed to continue disseminating the research outcomes of the SRA through the following platforms during 2024/5. These plans are:

Project webinar

In April 2024 the team is planning to deliver a webinar facilitated through the PSFN. The workshop (webinar) will highlight examples of successful initiatives that have linked local agriculture and foods to school food provision globally, the factors that contribute to success, best practices, the impacts of this approach and how different actors and beneficiaries across the school food supply chain benefit. Other wider societal benefits that arise from this approach to diets, nutrition and health, as well as food systems and environmental sustainability, will also be highlighted. The second part of the workshop will focus on presenting the overall findings from the SRA. This will include the presentation of the business cases for best-bet options to better integrate local agriculture to school food provision in selected Pacific Island countries for any further discussion. The PSFN will also share the infographic and research brief on their webpage and with their mailing list.

Infographic

An engaging, two-page infographic is currently being finalised. This infographic provides a visual summary of the project findings and will be emailed to all respondents, as well as government ministries (agriculture, health, and education) in each of the 22 countries. The authors also plan to share this via the PSFN mailing list and request the SMC and GCNF to include this within one of their regular newsletters. The team also plans to discuss opportunities for inclusion of this, or the research brief, in global publications (e.g., GCNF Global Survey of School Meals, and next WFP State of School Feeding Report).

Research Brief

A 3 – 4 page research brief will also be developed to concisely present the key findings of the SRA. This will also be shared with respondents, government ministries, donor partners and made freely available on the PSFN, ACPIR and CGIAR websites.

Peer-reviewed, open access manuscripts

Two manuscripts are currently in draft for submission to peer-reviewed, open access journals. One manuscript will present the overall findings of the project, and will be submitted to the Lancet Regional Health, Western Pacific journal. The second manuscript will focus on the policy environment and will be submitted to the Food Security journal. Once published, these will be shared widely by the SRA team, and showcased in a PSFN webinar.

Global Child Nutrition Forum

The team are actively investigating opportunities for presentation of the SRA findings at the upcoming [Global Child Nutrition Forum](#) (GCNF) in Osaka, Japan in December 2024. This may be through a side-event, country sharing sessions or a SIDS workshop.

Next Global School Meals Conference, Brazil, 2025

The team is also exploring opportunities to showcase the SRA findings at this important global gathering and ensuring there is some visibility of the Pacific region.

SPC, ACIAR, CGIAR and development partners

The team will prepare a blog on the findings and recommendations of the SRA on the Alliance of Bioversity International and CIAT website. The Alliance will also facilitate for a webinar on the findings of the SRA through the School Meals Coalition's Research Consortium Community of Practice on Diets and Food Systems. The team are also discussing opportunities to link into upcoming SPC activities. The team are interested in organising a brown bag session at ACIAR to share the findings of this SRA. Additionally, team members are working to identify an opportunity to share the findings with development partners, e.g., FAO, UNICEF and WHO, through upcoming regional events.

PSFN/ACPIR research symposium or webinar series

The PSFN and Australian Centre for Pacific Islands Research (ACPIR, UniSC) plan to host a joint webinar/research symposium on school food and nutrition environments during 2024. This will include dissemination of SRA findings.

9 Conclusions and recommendations

9.1 Conclusions

This SRA provides the first documentation of school food provision initiatives in the Pacific Islands, revealing their scale and scope. We may have not captured all the activities that are currently in place across the region because of the virtual interactions and as literature usually only depicts formalised projects, not grassroots activities where there is often less capacity to document and publish findings, however the findings of this SRA are a significant contribution to the existing, yet limited understanding of this area.

The project conducted KII to gather information on school food activities in all countries except for Guam, Niue, Pitcairn Islands, Tokelau, and Tuvalu. Nonetheless, some information was discovered through online searches for these countries. Multiple stakeholders in certain countries have contributed information about various school food provision activities.

School feeding, school gardens and 'other' programs were identified in the SRA. While national school feeding programs are not as prevalent as smaller initiatives, there are many smaller scale activities currently in progress or being planned for. The presence of an enabling environment for consultation and action is evident, despite the need for improvement in formal policies supporting school food provision. While some countries have policies guiding the utilization of local foods in school feeding programs, others have no specific policies related to school food. The presence of a policy does not eliminate the challenge of meeting requirements during periods of limited product supply.

Although a hybrid model is preferred, incorporating both local and imported food, there is a strong inclination towards using local produce in SPF. In the region, SFP may prioritize this as a long-term focus. Despite finding examples, there is still room for improvement in incorporating agriculture and local foods into current initiatives. Many school gardens are not designed with the goal of maximizing food provision in schools. Further research is needed to provide better guidance on effectively implementing home-grown school food initiatives in Pacific schools. The need for future intervention lies in addressing identified opportunities and gaps, which can be achieved through action-oriented research and policy strengthening.

There is variation in the monitoring and evaluation practices in the region, particularly in terms of scope and indicators. Some stakeholders expressed concerns about the lack of funding and other resources, like human capacity, for monitoring and evaluation. Stakeholders reported that a lack of resources is a common obstacle to incorporating local foods in school food provision activities. This includes financial, human, and physical resources.

Nevertheless, there are reports suggesting that school food provision activities have led to improved attendance, food security, leadership development for women, collaboration with traditional landowners and local food systems, and increased engagement of children, indicating numerous potential benefits.

The SRA has facilitated the identification of stakeholders/partners and established regional and broader partnerships through organizations like GCNF. This establishes a strong base for future projects.

Some of the findings have already been disseminated, but there are extensive plans for additional activities in 2024/5 to share them with a Pacific and global audience.

9.2 Recommendations

Across the region, there is a growing awareness of SFP's many benefits and increased motivation. By including 22 PICTs and relying on virtual interactions, the SRA's ability to fully comprehend value chains and potential impacts of school meals programs (SMP) was constrained while attempting to identify SFP across the region. The available evidence worldwide on SMP implementation and impacts does not consider Pacific Island food systems.

Globally there is recognition of the nutrition and health impacts (e.g., increased diet quality, decreased micronutrient deficiency), educational (increased attendance and cognitive performance), social (e.g., future earning potential, equity), economic (e.g., job creation and \$9USD return on \$1USD invested in SMP) and environmental (boost climate-resilience, conservation of agrobiodiversity) of these for local communities and more broadly. With a sound understanding of related activities across the region, there is a now need to further explore how to design and implement a homegrown SMP approach in a small number of countries. This would generate much-needed evidence on how to implement Pacific homegrown SMP models and the multi-dimensional impacts of these.

Countries of focus for a larger project are proposed to be Fiji, Vanuatu and Solomon Islands

The goals, and associated research questions of a next project would be:

1. Co-design and implement a proof of concept/pilot in selected countries to identify, develop and test value chains/models for homegrown SMP.

This includes working with all stakeholders across the home-grown value chain: Farmer Organization - Food Production - Trading - Value Addition - Distribution to Schools - Food Preparation - Distribution to Children.

Associated research questions:

- What are the opportunities for taking a whole food systems approach (e.g., land based/aquatic protein sources) to SMP in country X/Pacific?
- How can SMP be designed to be climate-resilient in each context?
- What type of food procurement model is best for each context?
- How can we best organize farmers groups to ensure reliable capacity to supply?
- What are the options to improve farmer group negotiation skills?
- What are the opportunities for women's engagement and empowerment in SMP?
- What are the opportunities for small and medium enterprises (SME)?
- What are the opportunities for Youth engagement and empowerment in SMP?
- How do we recruit more youth/women into farmer groups?
- How can we build leadership skills, group cohesion and stronger teams?

- What are the infrastructure issues for schools to be in a better position to receive and process a wider diversity of foods?
- What resources/capacity building would support school staff involved in SMP?
- What are the opportunities for the wider school community (including parents) to be involved in SMP?
- What complementary initiatives can improve the impact of SMP?
 - How do school gardens play a role in SMP?
 - What are the multiple benefits of gardens? (activity, cost etc.)
 - How can nutrition education be incorporated into SMP?
- How can we provide research support to other complementary projects in the target countries, and more widely in the Pacific region, which also have a school's focus?
- How can direct engagement with children (i.e., using appropriate participatory research methods [PAR]) regarding designing SMP and other aspects influencing their school food environment be an effective tool for a successful SMP and in particular, incentivise children to consume local and nutrition foods?

2. Evaluate the proof of concept/pilot(s) using both quantitative and qualitative approaches that capture the experiences and testimonies of the various actors involved to generate impact data

Associated research questions:

- How is the success of SMP in the Pacific measured?
- What indicators can be used to measure different aspects of a SMP?
- What are the nutritional, educational, social and economic impacts of a home-grown Pacific Islands SMP?
- What are the environmental impacts of a home-grown Pacific Islands SMP?
- What support is required to measure aspects of a SMP? And how does this data/evidence get used?
- What changes are seen within assessment of school food environments before and after the school meals intervention?
- What can the impact of such engagement (with children using PAR) have on the broader community in regard to helping shape healthier diets and consumption patterns?

3. Develop clear policy recommendations and resources, and simultaneously actively engage governments from multiple sectors (health, education and agriculture,

forestry, and fisheries) to further support the enabling environment for home-grown SMP.

Associated research questions:

- How can evidence generated from a SMP be utilised for policy change?
 - What are the leverage points within the specific respective country and regional policy mechanisms to enable evidence based effective policy changes that support home grown school meals?
- What are the communication, capacity building and knowledge brokering innovations and tools that can be effective at informing and inspiring policy and other key stakeholders?
- What resources and support do government decision makers require for policy design and implementation?
- How can 'peer learning and exposure visits or triangular cooperation (success stories) with PI neighbours (e.g., Timor/Philippines) be used to enhance capacity and inspire?

There are several tools, e.g., the FRESH initiative has developed a Collaborative Needs Assessment protocol and approach which has been used to engage key stakeholders in countries to map food environments and co-design interventions.

When gathering perspectives from local value chain actors, it is recommended that this be undertaken in country to enhance data collection and the diversity of perspectives included. In country data collection can also support enhanced partnerships, as well as the depth of diversity of available foods. There is also an opportunity to strengthen linkages with organic farmers under POETcom in respective countries.

There are also options to partner with existing or planned school meals programs that will be implemented by Government and/or other multilateral organisations to provide research support and evidence. For example, IFAD is about to start a new program, Agricultural Investment for Markets and Nutrition in Solomon Islands and Vanuatu that includes a component on establishing school feeding in select schools as part of the demand side to stimulate agriculture value chains. IFAD have shown interest in collaborating with ACIAR to support research and evidence generating related to this, given the novelty of the approach and the need for learning in the Pacific.

A follow-on project also provides an opportunity to develop standardised indicators and reporting for SFP activities in the region. This is recommended given the wide range of stakeholders involved in these programs, and the challenges that have been identified with monitoring and evaluation. Utilising a consistent set of indicators, could assist with tracking change and impact over time. This could be housed alongside the school food activity database on the PSFN website.

This SRA did not actively investigate the use of blue foods, nor the feasibility of engaging with the fisheries sector, however it is recommended that this be included in future projects given the important role aquatic foods can play in SMP.

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9.5 List of publications produced by project

Manuscripts in preparation

Forthcoming – On overview of school food provision in the Pacific Islands – current state and capacity. Target journal: Lancet Regional Health Western Pacific.

Forthcoming – An exploration of the school food policy landscape in the Pacific Islands. Target journal Food Security.

10 Appendixes

10.1 Appendix A: Systematic literature search process

The systematic literature search protocol utilised for objective 1 was as follows:

Objective: The objective of this literature review is to identify and describe the current state of school food provision and any current, and potential links to local agriculture in the Pacific Islands.

Inclusion criteria

Participants

Sources that include preschool, primary and secondary school students/settings in the Pacific Islands countries and territories (PICTs) will be considered for inclusion in this scoping study. Studies will be excluded if they were based on a university setting or included university students, or if Pacific Island data sets cannot be extracted.

Concept

This literature review will consider all evidence that broadly describes, measures, or discusses school food provision in PICTs and/or makes links to local agriculture. Evidence on initiatives/interventions or projects implemented to promote school food provision or local agriculture in schools will also be considered. For the purpose of this literature review school food provision includes school gardens, school agriculture and aquaculture, school canteens, school feeding programs, school food supply and nutrition/local food school activities. Additional terms can be added to search terms to capture the broader complexity and influence of school food provision. Information on the study design, duration, location, population, scale, funding, findings, and who implemented the initiative/project will be recorded.

Context

This literature review will use a regional approach and include sources from the following countries: Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Pitcairn Islands, Samoa, Solomon Islands, Timor-Leste, Tokelau, Tonga, Tuvalu, Vanuatu and Wallis and Futuna. Migrant populations from any of these PICTs living outside of the country list will be excluded as other countries are beyond the scope of this project.

Types of Sources

The literature review will consider all publications that broadly describe, measure, discuss or promote school food provision in any of the PICTs that met the inclusion criteria. Quantitative, qualitative, and mixed method studies published in peer-reviewed journals will be considered, including, designs such as experimental, trials, descriptive observational studies, ethnography, before and after studies, case studies and reviews. In addition, grey literature will be considered including, but not limited to, government, organization and/or research project reports. Opinion papers that met the inclusion criteria will also be considered for inclusion. Summary sheets and conference abstracts will be excluded. If the same information is

reported in more than one publication, the primary article or article/s with the most complete data will be used.

The methods used for the search are outlined.

Methods

Search strategy

The search strategy aimed to locate both published and unpublished studies and reports. The search strategy, including all identified keywords and index terms, was adapted for each included database and/or information source. A preliminary search was conducted on various databases to identify evidence on the topic and an appropriate search strategy. A final comprehensive search was undertaken by two members of the research team, on the databases Scopus, CABI and PubMed. The search strategy included various combinations of, and variations on, the keywords 'school food', 'school garden', 'school food supply', 'nutrition education' and 'pacific island countries'.

An extensive search of unpublished studies/grey literature was also conducted using Google Scholar, websites of various UN agencies, Pacific regional bodies, and other relevant NGOs. Identified sources were only included if they related to school food provision in PICTs. The limits for the database and grey literature searches included English-language papers published between 2007 and 2022. Additional sources of information were identified via screening the reference lists from all included sources of evidence.

Study selection

Following the final searches, all identified citations were collated and uploaded into EndNote v.X9 (Clarivate Analytics, PA, USA) and duplicates were removed. Remaining sources were retrieved in full, and their citation details were then uploaded to Covidence for review. In Covidence, titles and abstracts were screened by two independent reviewers for assessment against the inclusion criteria for the literature review. Full text of potentially relevant sources was then reviewed in detail. Disagreements that arose between the reviewers at each stage of the selection process was resolved through discussion with an additional reviewer.

Data Extraction

Data was extracted from included sources by two independent reviewers using a data extraction tool developed for this purpose. The data extracted included specific details about the participants, concept, context, study methods and key findings relevant to the literature review question. Any disagreements that arose between the reviewers was resolved through discussion, or with an additional reviewer/s.

10.2 Appendix B: KII guide (objective 2)

The KII guide, provided below, was used in objective 2.

NOTE TO INTERVIEWER:

- Approximately 45 – 60 minutes in duration
- Interviews will be audio-recorded for transcription
- Change the wording according to the person being interviewed (e.g., consider whether you are interviewing a teacher or an official)
- After the interviewee has given consent to conduct the interview, ask if he/she has any questions before beginning the interview
- If the interviewee is only aware of programs that have finished, adapt the rest of the questionnaire to the past tense to address these former programs
- Only collect information on activities/programs from within the last 10 years (2018-2023)

TO BEGIN WITH:

- Provide an overview of the project
- Provide an overview of what we mean by school food provision programs or activities
- Ask interviewees “do you know about any school-based programs or activities that provide food to the school”
- “Would you have enough insight to share any information about this activity?”

Section 1. Overview of School Food Provision Activity or Program

PROMPT:

- If the participant stated they know about more than one program or activity, complete the questions for one at a time
- “Great thank you, we are now going to ask you directed questions about one of the/the program/activity”
- “You are welcome to skip any question you don’t feel comfortable answering or might not have the answer to”
- “Please let us know if there are any questions you would like us to explain further”

1.0 General Background Information			
Question		Prompt	Response
1.1	Name of program/activity		
1.2	When did the program/activity start?		
1.3	Is the program/activity still on going? Or when did it end? If not, why did it stop?		
1.4	Are you involved in this program/activity? What was your role? How long have you been involved for?		
1.5	In how many schools is the program/activity running each year?		
1.6	How many students each year?	<i>or how many students at each school</i>	
1.7	From what grades are involved (preschool, primary, secondary etc.)?		
1.8	Is/are the school(s) private, public, day or boarding (or a combination)?		
1.9	On what scale is the program/activity implemented?	<i>International, national, regional, local/individual</i>	
1.10	What are the eligibility criteria to determine which schools took part in the program/activity?	<i>Geographic (e.g., remote, rural, urban etc.), school characteristics (e.g., private/public, HPS schools)</i>	

1.11	What are the eligibility criteria to determine which students take part in the program/activity?	<i>Sociodemographics, gender, religion, age etc.</i>	
1.12	Who is responsible for starting the activity/program?	<i>-Why did the program start -Government, NGO, research project, private business, local</i>	
1.13	Who is in charge of the overall management and coordination of the program/activity?		
1.14	Is the program/activity tied to the government or county/district? If so, how?		
1.15	What entities are/were engaged in the program/activity as key decision makers or by providing technical support or resources?	<i>Government ministries (e.g., MoE, MoH, MoA), departments, NGO's, universities, local businesses. Parent/teacher association</i>	
1.16	Is there any community engagement (by parents, students, past students, teachers, or other community members) in this program/activity?	<i>Please explain how</i>	
1.17	What are the main reasons for having the program/activity?	<ul style="list-style-type: none"> <i>- Meet educational goals, improve student performance, ensure students come to class,</i> <i>- Provide a social safety net/ social protection</i> <i>- Meet nutritional and or health goals of students</i> <i>- Decrease malnutrition</i> <i>- To prevent or mitigate over-nutrition and under-nutrition</i> <i>- To meet agricultural goals</i> <i>- deliver on policy, government commitment etc.</i> 	

Section 2. Types of Meals/Food Provided and Food Procurement

PROMPT/REMIND:

- “If you have a recent school menu handy, would you be able to send it to us?”
- “If you know of someone else who may be able to provide these details, can you share their contact details with us?”
- Still ask following questions if the participant can answer

2.0 Please provide information on which meals/foods and how often they are offered to students in an average week?				
Meal	Which days of the week?	During which time of the year are meals or food provided/available? E.g., during the school year, outside of school year, both	Describe a typical type of meal provided (e.g., sandwich, curry, soup, stew)?	Place of consumption (at school, take home etc.)
Breakfast				
MT				
Lunch				
AT				
Snacks outside of these times				
Other				

2.1 What type of foods/produce/crops are used provide food or prepare meals for the program/activity					
PROMPT: Use this table to prompt through each food item from each food category					
Food List	Food Item	Where is it sourced? <i>Farmer, fishermen, government, store, local markets, roadside market, trader/third party, parent, school garden, school fishponds, school poultry shed*</i>	Purchased, donated or both	Arrangement <i>contract/formal or informal</i>	What is this dependent on? <i>(e.g., seasonality/ availability, prices)</i>

<i>Energy Foods</i>					
Grains/cereals (wholegrain or white rice, pasta, noodles, bread)					
Roots/tubers (cassava, taro)					
Breadfruit, cooked green banana					
<i>Body Building Foods</i>					
Beans and legumes (Tinned/dried)					
Nuts and seeds (salted/unsalted, boiled)					
White meat (chicken, duck, turkey)					

Land based unprocessed red meat (beef, pork)					
Processed meat (Corned beef, spam, sausage)					
Fish (fresh fish, tinned fish)					
Other Seafood (crustaceans, seaweed)					
Eggs					
Dairy (yoghurt, milk, cheese)					
<i>Protective Foods</i>					
Fruits (orange, paw paw, pineapple, mango, banana, apples, etc. (tinned/frozen/fresh))					

Leafy green vegetables					
Other Vegetables (pumpkin, tomato, carrot, capsicum, green beans etc.(tinned/frozen/fresh)					
<i>Other Food items</i>					
Oils and fat					
Salty snacks (packaged crisps, crackers etc.)					
Condiments (sauces, herbs, spices)					
Confectionary/ sugary foods					
<i>Unsweetened Beverages</i>					
Water (plain)					
Coconut water					

Fruit juice (fresh)					
Tea (no sugar)					
Other					
Sweetened Beverages					
Fruit juice					
Soft drink/soda					
Milk drink					
Tea (with sugar)					
Other					
<p>NOTE TO INTERVIEWER: Make sure you have enough information to clarify food procurement model</p> <ul style="list-style-type: none"> <input type="checkbox"/> Import dependent <input type="checkbox"/> Local dependent <input type="checkbox"/> Hybrid – both local and import dependent 					

2.2 Further Incorporation of Locally Sourced Food			
Question		Prompt	Response
2.2.1	Of the foods listed above that aren't supplied locally, are there any community/local farmers that could reliably supply this food into the program?		
2.2.2	Are there any other local foods not currently being provided that could be reliably supplied from community/local farmers?		

2.3 School food Production			
Question		Prompt	Response
2.3.1	Who manages and who decides what food is produced?	<i>e.g., This could refer to garden/chook shed/fishponds/sea garden, etc.</i>	
2.3.2	What factors are considered when deciding which foods are produced?	<i>e.g., cost, student preference, nutrition, availability, seasonality, local/traditional varieties</i>	
2.3.3	Are any food items prohibited or discouraged to be included for reasons such cultural, health-related, religion, others?	<i>List reasons why</i>	
2.3.4	Does the person who manages/decides which foods are produced have any formal education or training on nutrition, agriculture or similar?		
2.3.5	If a garden, where do you source the seeds/seedlings for the garden?		
2.3.6	Are students involved in food production?	<i>e.g., wedding garden, planting crops, feeding animals, collecting eggs, etc.</i>	
2.3.7	How is the food from school gardens/fishpond/livestock used?	<i>Is it:</i> <ul style="list-style-type: none"> • <i>Consumed students</i> • <i>Consumed by students and teachers</i> • <i>Consumed by students, teachers and community</i> • <i>Consumed by community</i> • <i>Sold</i> • <i>Combination</i> • <i>Other</i> 	
2.3.8	Can students harvest/select produced foods?		
2.3.9	If yes, are there any constraints around who, what and when foods can be harvested/selected?		

2.3.10	If no, are there any regulations/rules that don't allow foods to be harvested/selected?		
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2.4 School Food Menu

Question	Prompt	Response
2.4.1	Are the students allocated set portions of food/meals, or do they decide/select their own meals/food?	
2.4.2	Are any food items prohibited or discouraged to be included for reasons such cultural, health-related, religion, others?	<i>List reasons why</i>
2.4.3	Who manages and who decides the school feeding menu?	
2.4.4	Does the person who manages/decides the school feeding menu have any formal education or training on nutrition, agriculture or similar?	
2.4.5	What factors are considered when 'menu planning'?	<i>e.g., cost, student taste preference, nutrition, availability/seasonality, local/traditional species</i>
2.4.6	Are any nutritional guidelines or recommendations used when designing the school food menu/options?	
2.4.7	How do students respond to the meals/food provided?	<i>e.g., do they eat the food, do they take the produce home, do they like the taste, are they satisfied with the meal size).</i>
2.4.8	Do students have a preference for local, traditional foods or something more 'modern'?	<i>E.g., fresh, local foods verse imported, processed foods</i>

2.5 School Food Preparation

Question		Prompt	Response
2.5.1	Are students involved in the food preparation, serving or cleaning up of school meals?		
2.5.2	Is there a school kitchen/canteen?		
2.5.3	Do you have any cooking facilities available to use to prepare food/meals? Where are meals prepared?	<i>Please describe</i> <i>- facilities/equipment</i> <i>- onsite (centralised) vs offsite (decentralised);</i>	
2.5.4	Do you have any storage facilities available?	<i>e.g., cold storage</i>	
2.5.5	Are there dedicated staff/supervisors for food preparation?		

2.6 School Food Purchasing			
Question		Prompt	Response
2.6.1	Are there any local foods that you think community/local farmers could reliably supply into the program that currently aren't?		
2.6.2	Are there any requirements surrounding purchasing or obtaining foods?	<i>e.g., only from a local or particular farmer/supplier, etc.</i>	
2.6.3	Did the program/activity experience any challenges with purchasing or sourcing local foods? If so, what were these and what was done to overcome them (if anything at all)?	<i>e.g., food shortages, import bans, natural disasters</i>	
2.6.4	Who is responsible for purchasing the food/meals?		

Section 3. Program Funding and Budgeting

3.0 How is the program/activity funded?

Funding from	Details e.g., what resources are funded, specify any in-kind
Government funding (e.g., MoE, MoH, MoA)	
International donors (e.g., USDA, FAO agency, SPC)	
Private sector (e.g., USP, USC)	
Local donors (students, parents, teachers, local businesses, community members)	
Other donors	

Question	Prompt	Response
3.1	Is the budget sufficient to run the program/activity?	<i>Probe around sufficiency for providing quality and quantity of meals</i>
3.2	Are there any costs associated from the students or families to enable students to access the program/activity?	

3.3 What budget do you have to prepare food for each day/week/month/year? <i>NOTE TO INTERVIEWER: Record which ever timeframe they give you</i>					
	Breakfast \$	Lunch \$	Dinner \$	Snacks \$	Total \$
Student					
Meal					
Daily					
Weekly					
Monthly					

Yearly					
Extra details					

Section 4. Integrated or Complimentary Activities

4.0 Are there any other school food related activities that are integrated or complement this program/activity?			
Complementary activity	Details e.g., overview of who is targeted, what's included & frequency (ad hoc, ongoing as a part of program/activity)	Integrated into curriculum (Yes/No)	Involvement of local farmer?
Student food and nutrition education			
Community or family-based nutrition education			
WASH e.g., food safety, personal hygiene, etc			
Agriculture education			
Aquaculture education			
Home economics/ cooking education			
Other			

Section 5. Knowledge Capacity & Capacity Building

Question	Prompt	Response
5.0 Were nutritionists/health professionals involved with this program or activity?	<i>Yes/No, If YES, how?</i>	
5.1 Were there any special training or certification programs required for cooks/caterers?	<i>e.g., nutrition portions, menu planning, food safety, business/management, etc</i>	

5.2	Has there been a purposeful focus on creating jobs or income-generating opportunities or leadership opportunities for? <ul style="list-style-type: none"> • Women • Local farmers • Other 	<i>If YES, how?</i>	
5.3	Are staff provided with any training opportunities to upskill?	<i>If yes, provide details on what has been offered</i>	
5.4	What training opportunities would you like to upskill in?		

Section 6. Monitoring and Evaluation

Question	Prompt	Response
6.0	Is there a system for monitoring and evaluating the program/activity?	YES/NO
6.1	Are you able to tell us any brief details about the monitoring and evaluating?	<i>Does M&E focus on diet quality? Level of local food procurement?</i>
6.2	Do you know about any outcomes or evaluations of this program or activity?	<i>e.g., major studies, project report, document, website etc. If yes, please provide details</i>

- Section 7. Policy, Standards and Regulations

7.0 Are there any national or school-based laws, policies, or standards related to school food provision? If yes, please tell us any details about this/these policies e.g., name of policy and what it relates to.				
<i>NOTE TO INTERVIEWER: If participant doesn't know skip to questions 7.1 and 7.2</i>				
Topic	Name of law, policy or standard(s)	Policy/standard details	Scale of policy/standard (e.g., local school/national)	Which ministry/department is responsible for the development
National school feeding policy				
Nutrition (e.g., nutrition guidelines/standards for school feeding programs)				

Health and NCD for school age children				
Food Safety				
Agriculture (e.g., purchasing of foods from small holder farmers)				
Private sector involvement				
Food management, procurement and logistics related to sourcing food				
School food marketing				
Other				

Question		Prompt	Response
7.1	Who/which ministry is largely responsible for broad school food policy area?		
7.2	Would you be able to share the contact details of someone who might be able to tell us more about policies?		

Section 8. Challenges, Successes and Opportunities

Question		Prompt	Response
8.0	Please describe any significant challenges you faced related to this program/activity?	<i>e.g., storing food</i>	
8.1	What are the challenges for the inclusion of local fresh foods in the program/activity?	<i>Consider factors such as quality, quantity, sustainability of supply, acceptability, cooking time, affordability and availability of recipes</i>	
8.2	Please describe any strengths or positive developments for the inclusion of local fresh foods in the program/activity?		
8.3	Do you foresee this to be sustainable moving forward?		

8.4	Who or what local partners do you think would improve the inclusion of local food into the program or activity?		
8.5	Thinking about local food and schools in the Pacific, what would you like to see in the future?	e.g., relating to local food production	

Section 9. Summing Up

Question		Prompt	Response
9.0	Do you have anything else that you want to mention related to the topics discussed today?		
9.1	Do you have any documents, websites or information materials on school feeding projects or other relevant projects that you could share with our project team?		
9.2	Is there anyone else you can recommend we contact for further information about school food provision?	<i>List name, email address, affiliations etc.</i>	

10.3 Appendix C. KII guide (objective 3)

The KII guide, provided below, was used in objective 3.

NOTE TO INTERVIEWER:

- The purpose of these interviews is to identify sustainable options for integrating local agriculture in school food provision and recommendations for future action and research opportunities.
- Approximately 45 – 60 minutes in duration
- Interviews will be audio-recorded for transcription
- Change the wording according to the person being interviewed (e.g., consider whether you are interviewing a school actor or an government official)
- After the interviewee has given consent to conduct the interview, ask if he/she has any questions before beginning
- Only collect information on activities/programs from within the last 10 years (2018-2023)

TO BEGIN WITH:

- Provide an overview of the project
- Provide an overview of what we mean by school food provision programs or activities
- Provide an overview of what we mean by home grown school feeding/farm to school, and the school food supply chain

Today, we are mostly interested in knowing about any opportunities, challenges, and options for integrating local agriculture into school food provision. Essentially, we are trying to develop an understanding on the context in XXXX (respondents country) that provides the ideal conditions for linking agriculture to school food provision for future research opportunities.

SCHOOL FOOD PROVISION:

Just to be clear, what we mean by school food provision for this project, is any school program or activity that involves providing food in, or near the school environment to students. The scale of this can vary from national government run school feeding programs providing to smaller initiatives/activities in individual schools, for example, free meals, school gardening, agriculture/farming programs or home economics/cooking classes) where food happens to also be provided for consumption by students.

FARM TO SCHOOL FEEDING MODEL:

For the purpose of this interview, we aren't too concerned by the different criteria required to be classified as farm to school feeding models. You could explain to the participant that when we refer to 'farm-to-school' we mean "Farm-to-school occurs through local food procurement, so this is when a school purchases local food items to be served in the cafeteria, in the

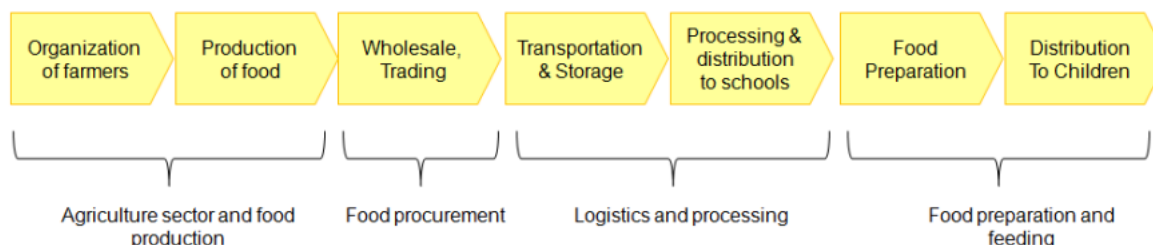
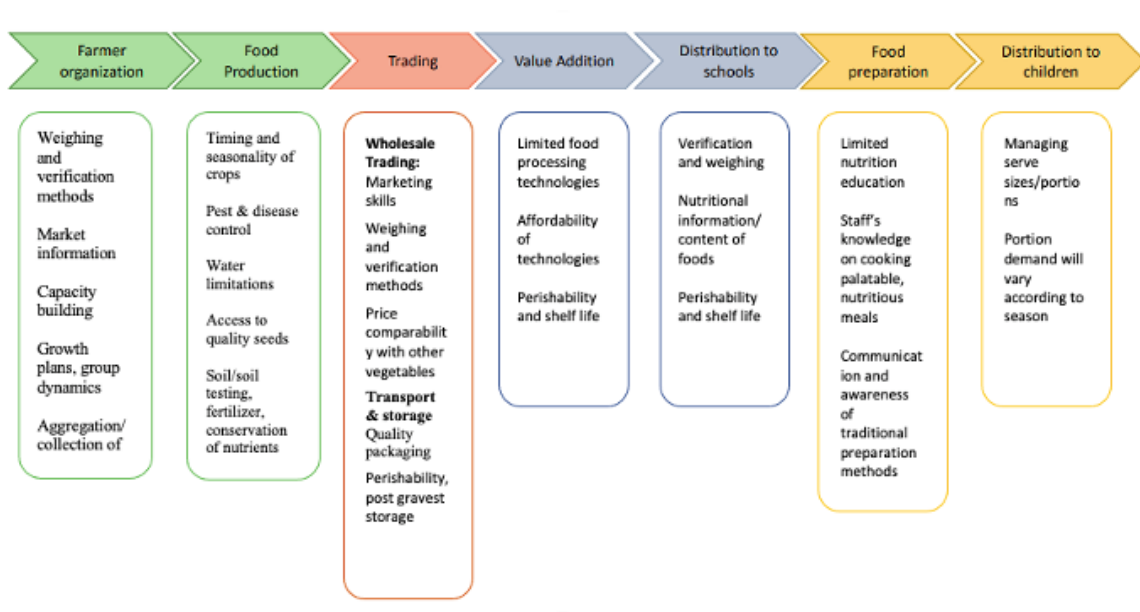
classroom, or as a meal or snack to students from local producer.” We are keen to know if they are doing this at all, how much food is locally procured, with what local produce, and what the challenges, opportunities and successes are in each country...

LOCAL AGRICULTURE:

When we refer to local agriculture, we mean any foods grown locally, including both traditional foods and non-traditional foods.

SCHOOL FOOD SUPPLY CHAIN:

- Interviewer to guide using HGSF supply chain framework and use of prompt image below if needed.
- You may also find it useful to prompt answers to the different questions by reading out each stage of the supply chain.
- You may need to provide some context to this for the participant to help them understand what is meant.



Useful document: Page 14 (supply chain) page 25-26 (needs assessment), page : <https://docs.wfp.org/api/documents/WFP-0000074274/download/>

Background questions: For all respondents

Date:	
Name of interviewer(s):	
Name of participant(s):	
Affiliation:	
Position/job title:	
Role with school food and/or local agriculture	

IMPORTANT NOTE: Below are three different survey options, review each one beforehand to determine which has the best language to be used for each participant. If in doubt, option 3 is a good all-round survey option.

Survey option: 1. Farmers/agribusiness value chains/agriculture

SECTION ONE

Q1. What are the major strengths?	
Based on current local agriculture, what would be the major strengths regarding supplying local foods into the/a school feeding program (or school food provision program/insert name of program)?	
Q2. What are the key barriers and constraints?	
<p>If schools indicated that they were interested in regularly procuring fresh produce including fruit, vegetables, meat, fish and eggs – what would the constraints or barriers be that inhibits you or other members of the farming group to engage with entering into this type of contract? Would they be able to fulfil conditions such as quantity? Quality? Year-round supply? What are challenges that you anticipate?</p> <p><i>Examples to guide discussions below:</i></p> <ul style="list-style-type: none"> ○ <i>Planting materials/seeds</i> ○ <i>Access to land</i> ○ <i>Cold storage</i> ○ <i>Processing facilities'</i> ○ <i>Transport limitations</i> ○ <i>Inability to store foods</i> ○ <i>Lack of business/finance skills to run commercial enterprise</i> ○ <i>Seasonality</i> 	
Q3. What opportunities are there to optimising the existing local procurement and school feeding model (or school food provision program/insert name of program)?	
Based on the current local food supply, what opportunities are there to optimising the existing procurement of local foods into the school feeding model?	
Q4. Is a farm to school model feasible?	

<p>Would a farm to school feeding model be feasible? <i>You may need to explain what you mean by 'farm to school' feeding model here.</i></p> <ul style="list-style-type: none"> o <i>Why or why not?</i> o <i>What would be needed to make this feasible?</i> o <i>Link broadly to school aged children and ag country needs e.g., TL and stunting, boost local economy, etc</i> 	
Q5. Preferred model?	
<ul style="list-style-type: none"> o What would your preferred model of farming be (e.g., more of an informal contract or a formal contract/Memorandum of understanding)? <p><i>If farmer suggest formal contract farming and they currently aren't under a contract, then probe for the reasons around why this doesn't occur and what would be needed?</i></p>	
Q6. What would farmers need?	
<p>In many cases, farmers may not currently be farming at the scale needed to provide commercial quantities of foods. What might farmers need to invest the capital/time/energy into setting up larger enterprises?</p>	

SECTION TWO

Continue building on questions asked in stage 1 interviews around current food being supplied and any produce that could be reliably supplied to the schools, that currently isn't? Probe with produce mentioned in stage 1 interviews.

<p>Q7. What local foods are farmers in your farming groups/cooperatives/ communities currently growing?</p> <p>(Explore the common foods for each of these categories: staples; legumes, nuts and pulses; animal-sourced foods; fruits and vegetables). Identify both traditional foods grown vs/and staple foods grown that aren't traditional (e.g., carrots)</p>	
<p>Q8. Of the foods produced, what is currently being supplied into school feeding programs (or school food provision program/insert name of program)?</p> <p>Please expand, who, how, when, where, characteristics, the type of farmer, etc...e.g., directly or indirectly.</p>	
<p>Q9. Are there key food groups/items that don't currently have any local food production?</p> <p>What would be needed to invest into these value chains?</p>	
<p>Q10. Of the foods/produce listed, are there any that could be produced more/in greater quantities to contribute to SFPs (or school food provision program/insert name of program)?</p>	
<p>Q11. If yes, what would be required to produce more of these nutritious foods?</p>	
<p>Q12. Could any other foods be reliably supplied into SFP (or school food provision program/insert name of program)?</p>	
<p>Q13. If schools wanted to source nutritious local foods from you or other farmer groups for SFPs (or school food provision program/insert name of program), what criteria would they need to meet to enable you to do this confidently?</p>	
<p>Q14. Would you be able to recommend any other stakeholders, school actors, farmer groups who may be interested in an interview?</p>	
<p>Extra comments/notes:</p>	

Survey option: 2. School actors

SECTION ONE

Q1. What are the major strengths and enablers?	
Based on your current school feeding program (or school food provision program/insert name of program) and local food supply, what would be the major strengths regarding supplying local foods into the program?	
Q2. What are the key barriers and constraints?	
Based on your current school feeding program (or school food provision program/insert name of program) and local food supply, what are the main barriers and constraints to you providing nutritious, local foods to students regularly as part of the school feeding program (or school food provision program/insert name of program)?	
<ul style="list-style-type: none"> ○ <i>Budget</i> ○ <i>Staff capacity/skill</i> ○ <i>No cold storage or any storage</i> ○ <i>No access to affordable nutritious foods</i> ○ <i>Unreliable supply chains</i> ○ <i>Unstable food prices etc.</i> 	
<i>Interviewer to guide discussion using HGSF supply chain framework and use of prompt image examples below if needed</i>	
Q3. What opportunities are there to optimise local procurement (purchasing of local foods) into the school (or school food provision program/insert name of program)?	
Based on your current school feeding program and local food supply, what opportunities are there to optimising the existing procurement of local foods into the school feeding model?	<i>e.g., High number of farmers in community or farmer organisation groups to supply to schools, school gardens available or land available that could be utilised to start a school garden/farm to supply to school, good partnerships that could be utilised better, etc</i>
Q4. Is a farm to school model feasible?	
Would a farm to school feeding model be feasible? <i>You may need to explain what you mean by 'farm to school' feeding model.</i>	
<ul style="list-style-type: none"> ○ <i>Why or why not?</i> ○ <i>What would be needed to make this feasible?</i> ○ <i>Link to school aged children and ag country needs e.g., TL and stunting, boost local economy</i> 	
Q5. Preferred model?	
What would your preferred model be (e.g., contract farming)?	

SECTION TWO

Continue building on questions asked in stage 1 interviews around current food being supplied

and any produce that could be reliably supplied to the schools, that currently isn't? Probe with produce mentioned in stage 1 interviews.

Q6. Based on your current school feeding program (or school food provision program/insert name of program), what local food items do you wish you had more access to in order to provide more nutritious meals to students?	
Q7. What foods are produced by the farmers in this area? <i>(Explore the common foods for each of these categories: staples; legumes, nuts and pulses; animal-sourced foods; fruits and vegetables). Identify both traditional foods grown vs/and staple foods grown that aren't traditional (e.g., carrots)</i> <i>What foods are grown in the school garden? (if relevant)</i>	
Q8. Of the foods produced by farmers, what is currently being supplied into school feeding programs (or school food provision program/insert name of program)? <i>Please expand, who, how, when, where, characteristics, the type of farmer, etc...e.g., directly or indirectly</i> <i>Are the foods grown in the school garden supplied to the school feeding program? If yes, what types? (if relevant)</i>	
Q9. Of the foods produced, could any be produced more/in greater quantities to contribute to SFPs (or school food provision program/insert name of program)?	
Q10. If yes, what would be required to produce more of these nutritious foods?	
Q11. Could any of the other foods be reliably supplied into SFP (or school food provision program/insert name of program)?	
Q12. If farmers were to provide nutritious local foods to the schools, what criteria would they need to meet to enable you to be confident in their reliability of supply and quality?	
Q13. Would you be able to recommend any other stakeholders, school actors, farmer groups who may be interested in an interview?	
<i>Extra comments/notes:</i>	

Interview questions: 3. *Combined version for stakeholders who have involvement that is not directly suited to just 'schools' or just 'agriculture'.*

SECTION ONE

Q1. What are the <u>major strengths</u> ?	
Based on current school feeding programs and local food supply/agriculture, what would be the major strengths regarding supplying local foods into school feeding programs in (name of country)?	
Q2. What are the <u>key barriers and constraints</u> ?	
If schools indicated that they were interested in regularly procuring fresh produce including fruit, vegetables, meat, fish and eggs – what would the constraints or barriers be to providing these local foods to students regularly as part of a/the school feeding program? <i>Would they be able to fulfil conditions such as quantity? Quality? Year-round supply? What are challenges that you anticipate?</i> <i>Examples to guide discussions below:</i>	

<ul style="list-style-type: none"> o <i>Planting materials/seeds</i> o <i>Access to land</i> o <i>Processing facilities'</i> o <i>Transport limitations</i> o <i>Lack of business/finance skills to run commercial enterprise</i> o <i>seasonality</i> o <i>Budget</i> o <i>Staff capacity/skill</i> o <i>No cold storage or any storage</i> o <i>No access to affordable nutritious foods</i> o <i>Unreliable supply chains</i> o <i>Unstable food prices etc.</i> 	
<p>Q3. What <u>opportunities</u> are there to optimising the existing local procurement and school feeding model?</p>	
<p>Based on the current school feeding programs and local food supply, what opportunities are there to optimising the existing procurement of local foods into a/the school feeding model?</p>	
<p>Q4. Is <u>a farm to school model feasible</u>?</p>	
<p>Would a farm to school feeding model be feasible in Vanuatu?</p> <ul style="list-style-type: none"> o <i>Why or why not?</i> o <i>What would be needed to make this feasible?</i> o <i>Link broadly to school aged children and ag country needs e.g., TL and stunting, boost local economy, etc.</i> 	
<p>Q5. Preferred model?</p>	
<p>What would your preferred model be (e.g., contract farming)?</p>	
<p>Q6. What would <u>farmers need</u>?</p>	
<p>In many cases, farmers may not currently be farming at the scale needed to provide commercial quantities of foods. What might farmers need to invest the capital/time/energy into setting up larger enterprises?</p>	
<p><i>Extra notes/comments:</i></p>	

SECTION TWO

Continue building on questions asked in stage 1 interviews around current food being supplied and any produce that could be reliably supplied to the schools, that currently isn't? Probe with produce mentioned in stage 1 interviews.

<p>Q7. Based on current school food provision, what local food items do you wish schools had more access to in order to provide more nutritious meals to students?</p>	
<p>Q8. What are the local foods that farmers in your farming community/area are currently growing? (Explore the common foods for each of these categories: staples; legumes, nuts and pulses; animal-sourced foods; fruits and vegetables). Identify both traditional foods grown vs/and staple foods grown that aren't traditional (e.g., carrots)</p>	

Q9. Of these commonly produced foods, what is currently being supplied into school feeding programs? Please expand, who, how, when, where, characteristics, the type of farmer, etc...e.g., directly or indirectly	
Q10. Are there key food groups/items that don't currently have any local food production? What would be needed to invest into these value chains?	
Q11. Are there any other foods that could be produced more to contribute to SFPs?	
Q12. If yes, what would be required to produce more of these nutritious foods?	
Q13. Could any of the other foods listed be reliably supplied into SFP?	
Q14. If schools wanted to source nutritious local foods from farmer groups for SFPs, what criteria would the schools and farmers need to meet to enable this to happen successfully? Who would be needed to secure reliability, supply and quality?	
Q15. Would you be able to recommend any other stakeholders, school actors, farmer groups who may be interested in an interview?	
Extra comments/notes	



10.4 Appendix D. Symposium

IUNS 22nd International Congress of Nutrition Symposium

Annals of Nutrition and Metabolism, Vol.79(Supplement 1), pp.188-188 International Congress of Nutrition, 22nd (Tokyo, Japan, 06-Dec-2022 - 11-Dec-2022) 2023

DOI: <https://doi.org/10.1159/000530786>

Speaking at the International Congress of Nutrition about the school meals programs in the Pacific, from left, Brynn Demei, Sefano Katz, Helmtrude Sikas-Iha, Jessica Raneri and Dr Sarah Burkhart. Photo: Kenichi Yoshida

Scoping the potential to integrate local agriculture in the provision of food in schools in the Pacific Islands.

Sarah J Burkhart¹ , Jessica Evelyn Raneri² , Danny Hunter³

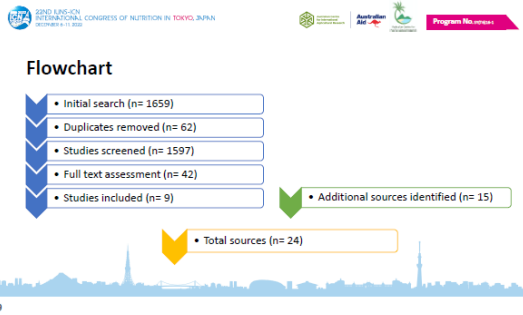
¹. University of the Sunshine Coast (Australia)

². Advisor to the Australian Centre for International Agriculture Research and Department of Foreign Affairs and Trade (Australia)

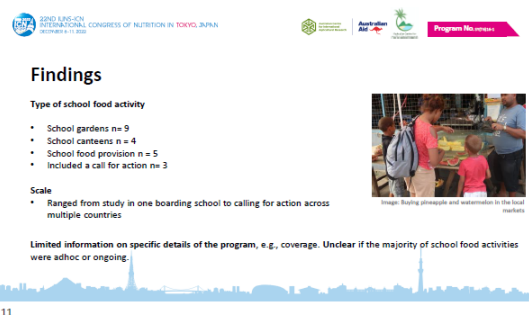
³. The Alliance for Bioversity International and CIAT (Italy)

Food provision in schools based on home-grown models can serve as platforms for food system transformation, while simultaneously improving the quality of education. Locally grown and procured food is a nutritious, healthy, and efficient way to provide schoolchildren with a daily meal while, at the same time, improving opportunities for smallholder farmers. Despite the significant global development of home-grown school feeding types of approaches linking to local producers and aimed at improving farmer livelihoods and other related job creation, there has been very little attention on these models in the Pacific Islands region or indeed on school feeding programmes in the region generally. The aim of research is to provide an understanding of the current extent and status of school food provision and environments in Pacific Islands countries, with a focus on better understanding the enabling policy environment, institutional and farmer capacity to better support the integration of local agriculture into school food provision. A desk based scoping study and interviews will develop an understanding the current state of integration of local agriculture into school food provision in the region, and the development of a database of activities. Based on these findings, a subset of countries will be selected for a deep-dive of the policy landscape to identify policy enablers and to document case studies. Furthermore, sustainable options for integrating local agriculture into school food provision and recommendations for action and research opportunities will be identified through workshops and discussions with key stakeholders and organizations. This symposia





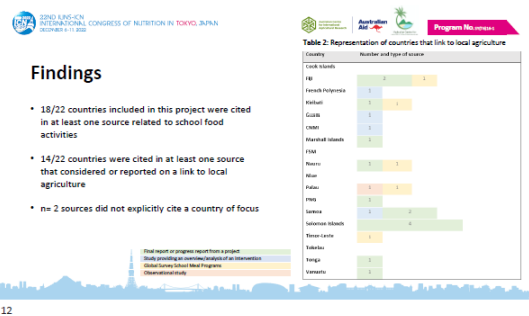
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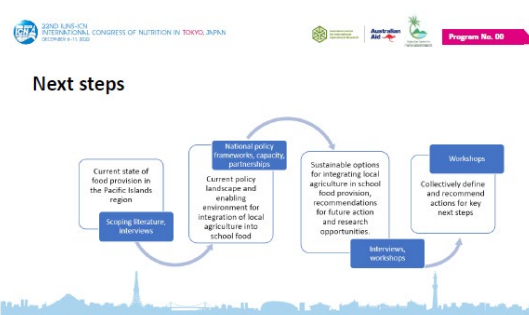
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Table 3: Overview of GSSMP results from Fiji, Kiribati, Nauru, Palau and Timor-Leste

Country	Name	Meal provided	National budget/ Gov. fund	Lead agency	Year group(s)	Coverage*	Persons involved in GPP
Fiji	1. Free Fruit Initiative for Early Childhood Education (FIEE)	1. Snacks	Yes	Ministry of Education, Heritage and Arts; Technology Enhancement Centre (Training section)	1. Primary; 2. Students in year 1, 2, 3, Primary and secondary (future broader roll)	0% (incl. 0%)	Yes
	2. Free Milk Initiative	2. Snacks	Yes				
	3. Save the Children Feeding Program (School canteen roll)	3. Lunch	Yes				
Kiribati	Kiribati Government Senior Secondary School Student Lunch	Lunch	No	Ministry of Education	Secondary school	0%	Yes
Nauru	School Feeding Program	Lunch	Yes	Department of Education	Preschool, primary, secondary	100%	No
Palau	Food Service Program	Lunch	Yes	Ministry of Education	Preschool, primary, secondary	100%	Yes
Timor-Leste	School Lunch Program (Programa Merende Escolar)	Lunch	Yes	Ministry of Education, Youth and Sport; Ministry of State Administration	Preschool, primary, secondary	100%	Yes

2018: Fiji, Nauru; 2020: Kiribati; 2021: Palau, Timor-Leste

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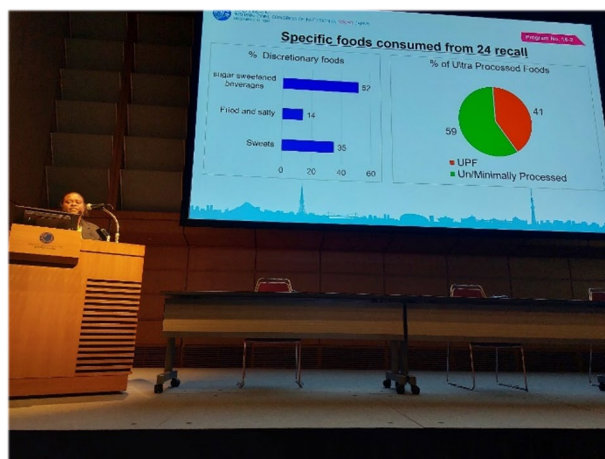
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Morobe School Garden's potential to Provide Nutritious Food: A pilot

Helmtrude Sikas-Iha¹ , Jessica Evelyn Raneri²

Papua New Guinea (PNG) has some of the highest global rates of chronic child malnutrition. At the same time, the majority of PNG youth are not attending school, with the primary school net attendance ratio for primary school students at 50%, dropping to 21% for secondary school. The combination of malnutrition and poor formal education results in significant economic impacts, including loss of productivity and intergenerational poverty. As well, employment prospects are poor for the school leavers who constitute 60% of the population. PNG youth are struggling to complete their schooling, with 80% pushed out of the formal education system annually. Agriculture is the main livelihood for rural populations hence if the current trend continues, rural youth are likely to similarly depend on agriculture-based livelihoods. Schools provide clear entry points for both agriculture and nutrition interventions, yet the school system no longer prepares them well for agriculture-based livelihoods, nor does it seek to engage their interest in agriculture. Agriculture and nutrition have been a part of PNG's curriculum since before Independence, including versions of the school garden (SG) model. However, these parts of the education system have fallen into disrepair due to resource and capacity constraints. Revitalizing of school farms and teaching students practical farming skills would help address the lack of agricultural extension services in PNG. The Morobe School Gardens Project implemented in Morobe province, PNG, is based on the fundamental concept which provides a model to promote school gardens as a way to engage youth in agriculture. The project established integrated gardens at the primary and secondary schools and education resources for teachers to utilize the gardens to deliver the mechanism. The pilot project implemented so far 15 gardens, 10 chicken sheds, and 1 fishpond in 15 primary and secondary schools. A survey was administered to 185 students and 6 teachers from 2 schools to provide data on understanding the school food environments, knowledge, and attitudes regarding nutrition and agricultural livelihoods, and students' diet quality through a qualitative 24hour recall. Boarding school menus were documented, and recommendations on how to improve their nutritional quality using the garden outputs were developed. Cost-benefit analysis models were developed to evaluate how these gardens could be financially self-sufficient, and their capacity to provide surplus produce and/or income to provide and/or procure nutritious foods. These data were used to develop a set of school food provision models utilizing the school garden. The project also took a proactive role in engaging the PNG Government on the topics of school gardens, nutrition, and the SG model, which is now recognized by the PNG Government and was endorsed in 2021 with an SG Policy. In this connection, the model SG project aims to bridge the gap in the curriculum in agriculture and nutrition education and low-cost agriculture production as a basis for a school food provision model. Keywords: nutrition, school gardens, agriculture, school garden policy, education.

Image: Helmtrude Sikas-Iha presents at IUNS-ICN.



Palau's School Service Program (Food Service Program at a Glance)

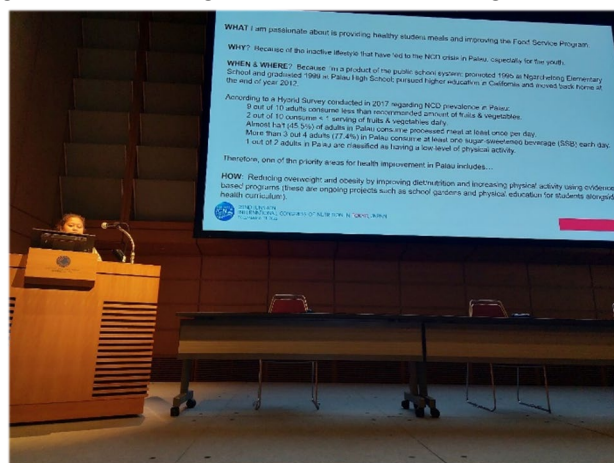
Brynn Demei¹

¹. Palau Ministry of Education (Palau)

The Food Service Program (FSP) is a Program that provides food and kitchen supplies to all eighteen public schools under the Ministry of Education in the Republic of Palau. The idea is not only distributing food supplies to cafeterias where about thirty cooks prepare hot meals for students, but also providing cook workshops to enhance their cooking skills and services while utilizing local and nutritious food. However, about seven years ago when I came on board, there was a limited budget of about \$821K per year (current budget is \$946K per fiscal year), serving all public elementary schools while Palau High School meals were from restaurant vendors, which was using a big chunk of the limited yearly budget. There was barely local food utilized in the menu, as well as limited usage of fruits and vegetables. Thus, the direction taken was figuring out how to increase the limited budget while being creative enough to accomplish objectives of a healthy eating for all public school students. Several approaches had to take place to achieve this task. For instance, study was made and concluded that by hiring cooks to prepare meals, it would be more cheaper, so the kitchen was constructed as well as five cooks hired to prepare meals. Thus, the budget saved every month was then used to buy local vegetables and fruits as well as store food items when necessary. FSP realized that in order to provide nutritious food, the cooks have to be trained to cook these healthy food items. Thereby, Nutritionist volunteers (one from JICA and one from ICDFTaiwan) were requested to come on board and conduct cook workshops and trainings to enhance the cooking skills and improve nutrition and sanitation management. In addition, the Nutritionists also conduct cafeteria inspections as well as food education for the students and parents to promote healthy eating in the school setting. FSP conducts cafeteria visitations and monitoring in order to make sure that the given food supplies are being utilized. Moreover, collaboration and networking are important in order to request partner agencies to help with technical assistance as well as providing professional development. Alongside these solutions, FSP has reached out to fishing cooperatives in order to promote sustainable fishery, as well as having local partners to provide local fish, taro, fruits and vegetables, eggs and other food that are cheaper and lessen the carbon footprints. The major results of these endeavours are as follows: · By utilizing the local food systems, FSP is saving its budget in order to promote yearly improvements. · Nourishing children with local nutritious food has brought awareness to student healthy eating. · Yearly budget has increased to \$946K in order to provide student breakfast. · Nutritionists also conduct nutrition education for the community. · Health and nutrition initiatives are currently being developed due to networking with partner agencies in the government and non-government sectors. The results have been positive and effective. FSP will continue its important mission to nourish children through healthy eating while sustaining local food systems.

Keywords: Food Service Program (FSP), Food supplies, Nutrition, Local food

Image: Brynn Demei presents at IUNS-ICN.



Green Schools – nutritional food security in schools through a sustainable organic farming program in Beqa Lagoon, Fiji

Sefano Katz¹, Ulamila Matairakula¹, Taitusi Dradra¹, Josefa Cinavilakeba¹, Veresa Fung², Raquel Carter¹, Brian Gregory Mitchell¹

1. Pacific Blue Foundation (Fiji), 2. Fung's Farm (Fiji)

Pacific Blue Foundation has established the 'Beqa Lagoon Initiative' which forges strong partnerships to implement cross sectoral sustainable development of a remote Fijian seascape that is home to 1500 indigenous people. The Green Schools program is a fundamental element of the initiative. The Green Schools Program has been piloted at remote boarding school locations on two Islands in Beqa Lagoon and has been successful in integrating small commercial scale organic farming with the school curriculum. The project has demonstrated how the nutrition of school age students can be directly and tangibly improved using this practical educational model. School age children in remote islands of Fiji have limited access to fresh produce due to isolation and costs. As a result, their diets consist mainly of rice, cassava and tinned food, with occasional leaf vegetables provided by student parents. This has led to malnourishment of youth attenuating from vitamin and mineral deficiencies. As part of the Green Schools Program in Beqa Lagoon, organic farms have been established in and around school compounds and students are educated in the application of traditional and innovative agricultural practices to cultivate high-yielding nutritional crops. These crops include cabbage, beans, lettuce, eggplant, tomato and cucumber which are attended by students supervised by dedicated community members and the academic staff, harvested and cooked at the school's kitchen and consumed during school hours. As part of the school's activities, students are responsible for expanding and maintaining the school's organic farm, taught the nutritional value of consuming a range of fresh vegetables and the importance of a healthy, balanced diet. The Green Schools Program has improved the health, nutrition and well-being of school age children and the broader islands' community in the following ways:

- Direct nutritional benefits associated with consuming a wide variety of organic vegetables during school hours
- Integrating a variety of vegetables into the staple diet of children that they otherwise would have limited access to
- The opportunity to sell excess local produce, therefore providing financial-returns to the school supporting the farm maintenance
- Upskilling students with farming skills resulting in positive flow on effects as skills and learnings are shared with the farming community of the islands
- Providing the capacity and capability for students to grow commercial scale fresh produce using an organic closed system model therefore enhancing long-term income generating opportunities for youth as they transition into young adults

Provision of sustainable livelihoods in the form of high yielding organic farming that can replace unsustainable fishing and agriculture therefore enhancing environmental and ecological outcomes. This presentation will showcase the successes of the Green Schools program and highlight the importance of engaging students through hands on learning opportunities and practical farming solutions to improve nutrition. It will explore the important roles of the different stakeholders play in the inclusive education system of remote



island settings in assuring the long term educational and nutritional benefits for children and youth so they can become the role models and custodians of community health. Keywords: Food security, Nutrition, Environment, Governance, Sustainability Conflict of Interest Disclosure: None Further Collaborators: Isimeli Loganimoce: Fiji Locally Managed Marine Areas Network; Sarah Burkhart: University of the Sunshine Coast; Jodi Smith: Matanataki

Image: Sefano Katz presents at IUNS-ICN.

10.5 Appendix E. Regional consultation workshop summary report

Regional Workshop

January 2024

The objectives of the workshop were to:

- Share a summary of SRA findings
- Discuss what models may be suitable for school meals programs in the Pacific
- Discuss next steps in this work, including ideas for dissemination

Participant demographics

Over 60 registered for the workshop, with 20 attending.

Participants from the following countries attended:

- Cook Islands, Fiji, Kiribati, Samoa, Solomon Islands
- Australia
- Canada (visiting researcher)

Held on zoom

Workshop slides:

**School Food and Local Agriculture
in the Pacific Islands Workshop**

UNISCC Australian Centre for Pacific Islands Research Alliance Bioversity & CIAT Pacific Community Gouvernement de Nouvelle-Calédonie Australian Aid

1

Welcome

2

Acknowledgements

We would like to gratefully acknowledge the support of the **Australian Centre for International Agricultural Research (ACIAR)** for funding this work, and Irene Kernot our program manager.

Project team:
Dr Sarah Burkhardt, Dr Danny Hunter, Ms Bridget Horsey, Ms Jenna Perry, Ms Jessica Raneri, Ms Mikayla Hyland-Wood, Dr Stephanie O'Connor, Ms Alisa Toua, and Ms Elodie Casey.

UNISCC Australian Centre for Pacific Islands Research Alliance Bioversity & CIAT Pacific Community Gouvernement de Nouvelle-Calédonie Australian Aid

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Agenda

10.00am – 10.10am	Welcome and introductions
10.10am – 10.20am	A brief overview of some of the key findings to date
10.20am – 10.45am	Discussions on feasibility of models
10.45am – 11.25am	Discussion on options for integrating local agriculture
11.25am – 11.30am	Close

10am – 10.10am

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Introductions

Thank you for joining us today!

To get to know who is here, can you please add your name, your role and where you work (your organisation and country) to the chat.

We will be participating in discussions in today's workshop, but please also feel free to add questions and comments to the chat throughout the workshop.

10am – 10.10am

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School food provision activities in the Pacific Islands have the potential to play a significant role in

- the transformation of food systems,
- improving nutrition and health,
- increasing educational outcomes,
- and enhancing livelihoods.

10am – 10.10am

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Possible models

- Predominantly Local**
 - Procured from domestic farmers or school gardens (e.g. Mainly procured from homegrown/local or domestic farmers)
- Predominantly Imported**
 - Procurement of imported, processed foods
- Hybrid**
 - Hybrid of local and imported foods (part homegrown/local and part imported)
- Other models?**

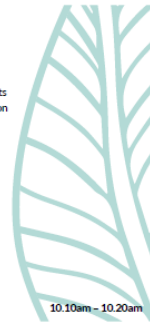
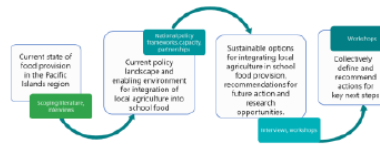


10.10am – 10.20am

7

Project background

- To build partnerships to seek understanding and consensus on country contexts that provide the ideal conditions for linking agriculture to school food provision for future research opportunities
- What do local school feeding models look like in the Pacific Islands?



10.10am – 10.20am

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Key Findings

- Countries:**
 - 22 countries
 - Programs identified within 17 of the 22 countries included
- Types of school food provision identified:**
 - 18 school feeding programs (varying scales)
 - 8 school garden programs
 - 4 other school food provision activities
- Different school feeding models identified:**
 - Import dependent
 - Hybrid of both imported and local foods
 - Predominantly local food source dependent

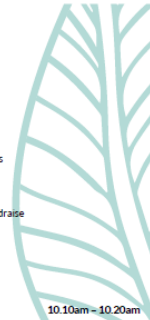


10.10am – 10.20am

9

Links to Local Food

- School Feeding**
 - 7 programs are required to include local foods, of varying scales
 - Policy requirement (4 schools), traditional governance requirement (3 schools)
 - 9 schools purchased foods from local farmers or through local markets
 - Those who purchased from local farmers purchased through informal arrangements
- School Gardening**
 - Multi-purpose use of gardens: education, consumption, generate small income/fundraise
 - 5 programs involved local farmers
 - All garden programs grew local or traditional foods
 - 1 school garden program was embedded into the school curriculum



10.10am – 10.20am

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Challenges and Opportunities

Challenges to including local food:

- Funding & finance
- Farmer capacity and local supply
- Westernised food system
- Staff capacity, knowledge & training
- Climate & environment
- Governance and policy
- Resources & facilities

But... despite the barriers there are clear opportunities to move forward...

- Advocate for community-driven solutions
- Best bet models and shared learnings
- Support for schools and local farmers
- Small scale project, further research on a larger scale is needed



10.10am – 10.20am

11

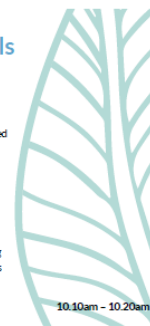
Feasibility of local school food models

Is a local school food model feasible?

- Majority of stakeholders indicated that a local school food model would be feasible
- The amount of local food feasible to include was context dependent and varied for each country

Preferred purchasing arrangements with farmers:

- Formal vs informal arrangements
- Dependent on farming community (subsistence vs production)
- Formal arrangement was preferred (if production farming present), consisting of a service contract or memorandum of understanding detailing expectations
- Protecting the farmer and providing security of produce to the school



10.10am – 10.20am

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What would be needed to support the feasibility of local school food models?



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Activity One: Feasibility of models

In your small group (break-out room), please discuss the following questions:
- What is the most feasible model for your context? Why is this?

10.20am – 10.45am

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Activity Two: What is needed to make the ideal model successful?

In your small group (break-out room), please discuss the following questions:
- What is needed for your ideal model to be successful?
- What do you see as the next steps in this work?

10.45am – 11.20am

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Final thoughts and questions

Please feel free to add any final thoughts/questions to the chat function

11.25am – 11.30am

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Close of workshop

Thank you very much for your participation and input today.

We greatly appreciate you taking the time to join us, and we hope that the discussion has also been useful for your work.

We will be in touch soon to follow up on ideas and share more details about the next steps.

If there is anything else you would like to share, please let us know.
You can email us: stuart.baker@ec.edu.au or d.bunter@ec.edu.au

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A summary of responses to each question is provided.

QUESTION: What is the most feasible model for your context and why?

Generally, a hybrid model was suggested as being most appropriate, and a good starting point for school meals programs. Focus on organic farming. Incorporating more local foods

Key themes:

- Hybrid model is more likely to be successful, with an aim of moving towards more local over time
- Need involvement from many sectors, including private sector
- Contextualised models that are community led
- Early entry points could be rural schools, private/faith-based schools
- Champions and leaders are needed from all sectors
- Challenges are perceived to be linked to finance, availability of items (both low availability of foods to include and high availability of highly processed foods), children's preferences
- Systems focus
- Links to school curriculum are important

Samoa's perspective

- Some research on food consumption in Samoa but focused on the household consumption findings. Could inform a school feeding programme.
 - Findings to date: Noted that around 70% of food is imported and 30% is sourced locally.
- Perhaps a more a hybrid model would be feasible at this stage. More imported, but as sustainability is built, more local food would be integrated.
- For sustainability it would be good to encourage a more local model.
- Start with a hybrid and then work towards building a more formal arrangement between producers and schools for more sustainability.

Solomon Islands perspective

Contextualise the model e.g., in the Solomon Islands we need to provide models for the Urban Centres

Rural areas (may work better as can be easier to mobilise rural communities)

- There needs to be a national policy to guide the discussions and a regulation that will guide everyone's actions.
- What will be needed to inform the policy?

- Start with a rural school because it may be easier to mobilise the rural communities and link these to the schools.
- Start with a rural community model
- Honiara may be too complicated (can be harder to link up)

Group. (Two participants from Fiji, two from AU entities ACIAR and DFAT)

- An important topic and discussion to be having
- A lot of packaged food is available
- In the short term a hybrid model would be most suitable – moving towards more local
- It is way too early for 'local' school model. A supply chain is needed, need to consider environmental effects and a significant amount of behaviour change is needed
- Fijians are used to eating local foods, but less so at school (more packaged options available that are easier)
- Embedded in curriculum? Planting to eat.... Need more focus on these areas
- Need champions
- During and post-covid there was a shift to local food production so a little bit of momentum there.
- Public/Private schools – Private may be an easier entry point based on current structures and activities
- A focus on gardens would be of interest, also consider livestock
- Consider the wider school food environment (not just in the school, but e.g., how could vendors near schools be encouraged to utilise local foods).

Fiji perspective (2x participants from Fiji with background of agriculture, 1x DFAT, 1x food systems researcher – answers were from Fiji participants only)

- **Preferred model:** Hybrid model would be most feasible, but some areas (rural areas) may be able to lean more towards a local/hybrid model
- **Why?** 1. Fiji already has great existing stakeholders within agriculture 2. Already existing initiatives from government to grow local foods 3. Traditional & indigenous practices are important and involved in existing local initiatives 4. Growing local foods/crops in backyard or community gardens is encouraged in Fiji
- Rural areas with more available land, local produce and smaller communities may make a local/hybrid model feasible

Group 2. Fiji and Cook Islands

- Fiji boarding schools are low hanging fruit (SPC Food Systems work).
- Don't just focus on farmers/farmer groups, use a broader cluster approach to engage other value chain actors for quality and consistency of supply.

- Feasibility is very strong for doing this at the moment, SPC work with Chefs. (Meal, menu preparation, fusion of local/trad. foods)
- Cook Islands, no SMP but lot of focus on school gardens to produce vegetables. Very interested in integrating fruit trees for fruit consumption.

QUESTION: What is needed for your ideal model to be successful?

Group. Fiji a Hybrid and Local Model

- Encouraging and empowering grassroots people to be motivated to get such a model working.
- Success requires a champion (governance clearly has a role in the success of such a model). Not just champions from one sector, use a systems approach, get Government support.
- Bring in private sector church groups (awareness of how to support)
- Governance is important: look at it from a systems approach. For school feeding programme to be successful needs buy in and investment from MOE (education/schools ministry responsible); MOH (nutrition aspects/food policy); Trade/SME/Agriculture/Fisheries (for connection to vendors/producers), and MOF (Ministry of Finance of who controls purse strings). Feeding programmes has to come from someone's budget and important it's not just seen as a school's initiative and therefore budget etc comes from MOE. This should be seen as a whole of govt and systems approach.
 - Support the MSMEs and leverage off other private sector including local supermarkets etc; understanding the food environment is important here.
 - Empowering citizens – through education system, advocacy
 - Financial support is also needed; incentivising MSMEs where possible.
 - Financial support is important e.g., Sports Diplomacy? Being part of a team. Working with leaders/champions

Group 2. Cook Islands, Fiji, Solomon Islands, Kiribati rep's (hybrid)

- Finance (sufficient resourcing for sustainability)
- Availability of items (a significant challenge to a local model is trying to source product and the cost that can be involved) (a lot of thought needed re value chains)
- A community model that engages with PTA, parents, teachers, health, agriculture (where there is nothing, this needs to a process that needs to engage all of the communities)

Group 3. Samoa

- In the context of Samoa, feasibility of hybrid, Still work to do to address gap between what's produced and what's on the plate at school. Need to better understand the reasons for household and children's food choices. Focus on behavioural change – strengthen this, as opposed to just focus on policy.

Some initiatives to encourage kids to bring healthy foods, but enforcement and stigmatisation is a challenge.

QUESTION: What do you see as the next steps in this work?

- Introduce a curriculum in schools.
- Finding champion within the different sectors who can work together (health, education, agriculture)– flesh out the leaders.
- Early wins – go through faith based groups as an example (e.g. some schools are run by community groups, faith based etc) and can be quicker to trial such initiatives rather than waiting for Govt to initiate or support; share this info to private sector groups and present the info for their buy in (what's the value add for them?) – many are keen to support local initiatives but don't know how or where to start (esp. CSR opportunities, or business opportunities)
- Engagement with community and parents, get them involved and to lead the initiative
- Children's preferences taken into consideration
- Involve private sector
- Soil quality is a challenge – cultivating vegetables for students is hard. Chance of getting gardening/chicken/pigs manure to help
- Use a systems approach, broader supporting infrastructure is important (e.g., post-harvest handling, source of energy, access to clean water)
 - Frozen options, eco-system around private sector
 - Capacity of schools to receive and handle local foods
 - Revitalising traditional knowledges and practices/Indigenous and traditional foods - but also practical and realistic e.g., time consuming nature. What works best in practical nature.
- Fiji Development Plan: can we feed this through?
 - Private sector engagement – how do we sell it to them?
 - Annual conference
 - Large farmer organisations
- Critical moment to raise this issue – for NCD's issues. Use to prevent NCD's in younger generations.

QUESTION: How do we disseminate this information?

Outside of the region

- GCNF Global Forum (Dec in Asia) - a side event.
- SMC

Results presented back to each country governments, discuss how to make best use of these.

- Suggestions: Approach Ministry of Education to share, what found/possible models.
- PSFN young and expanding – link in.

10.6 Appendix F. Program goals

Table 5. Program goals for school feeding activities

Country	Name and program goals
Cook Islands	<p>Cook Islands School Garden Program</p> <p>1. Provide education & introduce agriculture as an entry point into science in primary schools as well as an avenue for climate change resilience, 2. Promote healthy living, 3. Protect the environment, 4. Reducing NCDs</p>
FSM	<p>Early Childhood Education School Feeding Program</p> <p>1. Improve health of students/community and meet nutritional needs, 2. Improve student attendance, 3. Provide food security, 4. Increase exposure and knowledge of local foods</p>
	<p>Secondary School Feeding Program</p> <p>1. Improve health of students/community and meet nutritional needs, 2. Improve student attendance, 3. Provide food security, 4. Increase exposure and knowledge of local foods</p>
Fiji	<p>Green Schools Program</p> <p>1. Improve food security for students, 2. Improve nutrition status, 3. Improving socioeconomics of schools by decreasing reliance of schools on funding for school food and community food supply, 4. Support connecting of the younger generation to culture and land (from spiritual and practical element), 5. Integration of wider community into school garden</p>
	<p>TKC Gardening Pilot Project</p> <p>1. To increase students' awareness and appreciation of local foods, 2. Foster students' connection to the land</p>
	<p>Free Milk Initiative</p> <p>1. Assist reach daily calcium needs and improve nutrition status among year 1 students, 2. Influence children to develop a lifelong healthy habit of consuming milk and milk products and reach calcium needs, 3. To meet educational goals, 4. To meet nutritional and/or health goals</p>
	<p>Free Fruit Initiative</p> <p>1. To meet educational goals, 2. To meet nutritional and/or health goals</p>

French Polynesia	<p>Pacific Territories Regional Project for Sustainable Ecosystem Management (PROTEGE)</p> <p>1. Promote local food production and consumption, 2. Improve employment of vulnerable populations, 3. Improve food security (children have access to at least 1 nutritious meal per day), 4. Improve nutrition of children, 5. Deliver on policy (20-35% of locally produced food in school, 6. Building resilience and sustainability of the primary agriculture sector, 7. Prevent or mitigate over-nutrition</p>
	<p>Ressources Alimentaires et Santé aux Australes (RASA)</p> <p>1. Offer healthier foods in the school canteen coming as much as possible, from local produce</p>
Kiribati	<p>Government Senior Secondary School Student Lunch</p> <p>1. To meet educational goals, 2. To provide a social safety net, 3. To meet nutritional and/or health goals</p>
Marshall Islands	<p>School Breakfast Pilot</p> <p>1. Improve nutrition status/NCD prevention, 2. Improve food insecurity, 3. Improve attendance</p>
	<p>School Lunch Program</p> <p>1. Improve nutrition status/NCD prevention, 2. Improve food insecurity, 3. Improve attendance</p>
	<p>School Learning Garden Program</p> <p>1. Educate community to become food secure and self sufficient, 2. Educate community to become healthy and decrease NCD, 3. Educate community to become sustainable – decrease waste and increase soil health through composting</p>
Nauru	<p>School Lunch Program</p> <p>1. Provide food security, 2. Improve attendance, 3. Improve health eating and nutrition status</p>
New Caledonia	<p>Pacific Territories Regional Project for Sustainable Ecosystem Management (PROTEGE)</p> <p>1. Promote local food production and consumption, 2. Improve employment of vulnerable populations, 3. Improve food security (children have access to at least 1 nutritious meal per day), 4. Improve nutrition of children, 5. Deliver on policy (20-35% of locally produced food in school, 6. Building resilience and sustainability of the primary agriculture sector, 7. Prevent or mitigate over-nutrition</p>
	<p>Northern Province Boarding School Feeding Program</p> <p>1. Improve the quality of the food served, 2. Meet nutritional and or health goals of students, 3. Improve diversity of meal served</p>

CNMI	<p>School Farming Project</p> <p>1. Improve food security through local food, 2. Help schools and students learn how to grow local food, 3. Allow participants to be sustainable, 4. Improve knowledge and skills of new generation/students to become a farmer</p>
Palau	<p>Food Service Program</p> <p>1. Meet educational goals, 2. Provide a social safety net, 3. Meet nutritional and/or health goals, 4. Prevent or mitigate obesity, 5. Meet agricultural goals, 6. Promote local fisheries and agriculture</p>
	<p>Horticulture & Nutrition Enhancement Project</p> <p>1. Make school children aware of the benefits of consuming local vegetables and fruits, 2. Build the capacity of Palau farmers in sustainable agriculture production, 3. Strengthen local partnerships in Palau, 4. Promote economic growth by increasing transparency of local market information.</p>
PNG	<p>Marobe School Gardens Project</p> <p>1. Schools are sustainably managing established school gardens, 2. Develop a design for sustainable school garden models, 3. Activate the school gardens as practical learning environment</p>
	<p>Capacity Assessment – School Meal Project</p> <p>1. Identify primary and secondary schools for school meal project pilots, 2. Discuss and consult with provincial government on the pilot project to gain their support, 3. Mapping of potential service providers of the school meal activities, 4. Identify provincial focal points for the SMP project steering committee, 5. Undertake a rapid assessment of school's capacity, community/roadside markets, farmer groups and CSOs, 6. Meeting with relevant CSOs and partners to identify their potential in supporting the project in various service provisions</p>
Timor Leste	<p>School Lunch Program (Programa Merenda Escolar)</p> <p>1. Ensuring that all children who attend pre-school and basic education establishments integrated in the State's public supply network have a daily meal of healthy, balanced and essential food content for their development and encourage their participation in pre-school education -school and basic education, promoting the teaching and learning process, 2. Reduce the risk of poverty in school-age children 3. Reduce the rate of malnutrition and malnutrition of school-age children, 4. Reduce the dropout rate and meet educational goals, 5. Promoting healthy eating habits among educational communities, 6. Promote the participation and socio-economic development of communities in the construction of a sustainable development policy, 7. Contribute to the economic development of local farmers, 8. Promote territorial cohesion</p>
Vanuatu	<p>Kaikai Local, Kaikai Healthy program</p> <p>1. To utilise local foods to reduce food waste, 2. Encourage healthy eating and support local farmers.</p>
	<p>Baldwin Lonsdale Memorial School and Ambaebulu Junior Secondary School farm to school project</p> <p>1. Creating and supporting a supply chain of vegetables, fish and eggs to schools, 2. Indirectly support schools with supply of food throughout the year.</p>