

# **A STUDY ON REGULATORY REQUIREMENTS FOR FOOD FORTIFICATION IN THE PACIFIC**

**David Clarke, Amelia Carter and Brigid Borlase – Allen & Clarke, Policy and  
Regulatory Specialists Limited**

Report prepared for WHO Western Pacific Regional Office

## **Acknowledgements**

The report was researched and written by David Clarke, Amelia Carter and Brigid Borlase from Allen & Clarke Policy and Regulatory Specialists Limited.

Allen & Clarke would like to thank all our colleagues in the Pacific who provided information for this report. We would particularly like to acknowledge valuable assistance and input from Mr Bob Hughes, Ms Wendy Snowdon, Dr Jacky Knowles, Dr Tommaso Cavalli-Sforza, Dr Temo Waqanivalu, Dr Omar Dary and Mrs Nisha Khan.

# Contents

Acknowledgements .....	2
Executive summary .....	5
Summary of recommendations.....	6
Section 1: Introduction.....	7
1.1 Project rationale .....	7
1.2 Project scope .....	8
1.3 Methodology .....	9
1.4 Risks and limitations .....	10
Section 2: Establishing a Food fortification programme .....	11
2.1 Background and history of fortification .....	11
2.2 General principles for food fortification.....	12
2.3 Regulatory requirements.....	13
2.4 Policy work which must be carried out before legislation can be developed .....	14
2.4.1 Problem identification.....	14
2.4.2 Deciding upon the most appropriate intervention.....	15
2.4.3 Mandatory or voluntary fortification? .....	16
2.4.4 Implementation .....	16
2.5 Non-regulatory approaches to support fortification .....	17
2.5.1 Health promotion initiatives .....	18
2.5.2 Monitoring .....	18
Section 3: Food fortification in the Pacific.....	19
3.1 Current food fortification practices in PICs .....	19
3.2 Current legislative and regulatory arrangements for flour fortification in the Pacific.....	20
3.2.1 Our findings.....	20
Table 1: summary of current food-related regulatory framework in the PICs.	22
3.3 Trade issues .....	25
3.3.1 The impact of trade agreements on food fortification proposals .....	25
3.3.3 Application of trade agreements to fortification programmes .....	29
3.4 Non-regulatory frameworks in the PICs .....	31
3.4.1 Recommendations concerning non-regulatory matters.....	32
Section 4: Steps toward food fortification in the Pacific.....	32
References.....	35
Appendices.....	37
Appendix 1 – Terms of Reference for the project .....	38
Step 1: Identifying source material and key informants .....	41
Step 2: Consultation and sourcing of information from countries.....	41
Appendix 2 – Questionnaire to WHO countries .....	48
Appendix Three – Country Profiles .....	51
AMERICAN SAMOA .....	51
COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS.....	53

COOK ISLANDS .....	55
FEDERATED STATES OF MICRONESIA .....	57
FIJI .....	60
FRENCH POLYNESIA .....	63
GUAM .....	65
KIRIBATI .....	67
MARSHALL ISLANDS.....	69
NAURU .....	71
NEW CALEDONIA .....	72
NIUE.....	73
PALAU .....	74
PAPUA NEW GUINEA .....	75
SAMOA .....	77
SOLOMON ISLANDS.....	79
TOKELAU .....	81
TONGA .....	83
TUVALU .....	85
VANUATU .....	87
WALLIS AND FUTUNA .....	89

## Executive summary

Deficiency of micronutrients in national diets is one of the key nutrition-related health problems facing Pacific Island Countries (PICs). Studies of micronutrient status within the Western Pacific Region have found significant instances of iron, vitamin A and/or calcium deficiencies in at least 11 PICs. Fortification is a key strategy in addressing such problems, and so improving population health status.

This report considers the legal, policy and trade issues associated with establishing a sub-regional programme for wheat flour fortification in the Western Pacific. In addition, it offers an overview analysis of non-regulatory policy strategies (such as nutrition-related policies and monitoring of nutrition status) which can support a regulatory programme for food fortification.

General principles of food fortification are recognized internationally. Incorporating these into domestic law requires a clear understanding of the nutrition problem involved, so that a sustainable, enforceable, and technically sound programme can be implemented to best meet the needs involved. Systems for enforcement and monitoring will form part of such a programme, but best practice also requires that fortification forms part of a broader strategy for addressing micronutrient deficiencies. Such a strategy will include non-regulatory mechanisms, and must involve participants from the public and private sectors, and from the wider community.

While fortified flour, and foods manufactured from fortified flour, are available throughout the Pacific, only Fiji operates a systematic fortification policy. Thus, although there may be haphazard health benefits from the spread of fortified products in the region, PICs should adopt deliberate and mandatory fortification regulations, operating on the basis of a regional fortification standard. Since many PICs face similar nutritional issues, and since most will require resource assistance in implementing and monitoring food fortification regulations, a regional approach, supported by international organizations, best meets the health needs of the region. For this purpose, Fiji's Food Safety legislation offers a useful template for how regional fortification standards could be incorporated into domestic law. Work in this direction should be aligned with current WHO/FAO work to establish regional food standards for the Pacific.

A regional approach to food fortification would enable PICs to face trade issues with confidence, with only a slight risk of successful challenge to a fortification programme on trade grounds.

## Summary of recommendations

We recommend that:

- The WHO should help establish and maintain a regional fortification standard that addresses the key micronutrient deficiencies in the Western Pacific region.
- Where appropriate, individual Pacific Island countries should be encouraged and assisted to incorporate the regional fortification standard into their domestic law.
- Linkages should be built to integrate the WHO/FAO-sponsored food standards project and the present WHO work on fortification.
- Individual Pacific countries be assisted to strengthen and/or share their existing food control structures, including their personnel, and inspection and laboratory services.
- WHO sponsor ongoing nutritional surveys in the region to monitor and evaluate the fortification programme, and then align the fortification standard with the results of the surveys. Such surveys should be integrated as appropriate to other data collection exercises.
- WHO continue to assist countries to create a non-regulatory environment that supports public health initiatives, expanding to include support for fortification. As appropriate to local conditions, this will include such things as assisting with education, technical assistance, design of National Plan of Actions on Nutrition (NPAN), establishing nutrition committees, forming links to other health programmes, collaborating with industry and international groups, etc.
- WHO assess whether the STEPs survey instrument would provide a useful means of monitoring the effectiveness of food fortification programmes in the region.

## Section 1: Introduction

Countries in the Western Pacific Region are facing a number of important and interconnected nutrition-related health issues, which can only be countered through a comprehensive range of interventions. One key problem is found in the diets of Pacific Island populations, where a deficiency of key micronutrients can lead to micronutrient malnutrition.

Micronutrient deficiencies are a significant public health issue because they affect growth and development in children, as well as the ability of adults to function to their full potential. Thus the impact of these deficiencies affects individuals, as well as their families and communities.

Four key strategies are possible for addressing micronutrient deficiencies: dietary improvement, food fortification, supplementation, and global public health and other disease control measures. Studies have indicated that food fortification is one of the most cost-effective methods of addressing the problem.<sup>1</sup> Similarly, the World Bank, WHO, UNICEF, the Micronutrient Initiative (MI) and Global Alliance for Improved Nutrition (GAIN) have identified micronutrient interventions, particularly fortification, as among the most cost-effective of all health interventions.<sup>2</sup> This is reflected by the work of the Codex Alimentarius Commission in the area of fortification.

While its effectiveness is not in doubt, food fortification needs to be controlled by appropriate legislation. Adherence to legislation will ensure that the objectives of a food-fortification programme are achieved and that the levels of micronutrients are controlled within safe and acceptable limits.<sup>3</sup> This report focuses on the regulatory and non-regulatory options which must be developed to support successful food fortification programmes for Pacific Island Countries (PICs).

### **1.1 Project rationale**

The impetus for this report comes from a recent study on micronutrient deficiencies and opportunities for food fortification conducted by Professor Rosalind Gibson of the University of Otago, New Zealand. Professor Gibson found that six countries in the Western Pacific region had sufficient data to draw conclusions about micronutrient deficiencies. Her study identified calcium and iron deficiencies in populations in Fiji, Kiribati, New Caledonia, Papua New Guinea, the Solomon Islands and Vanuatu.

---

<sup>1</sup> International Life Sciences Institute 1997.

<sup>2</sup> Darnton-Hill and Nalubola 2002; Underwood and Smitasiri 1999.

<sup>3</sup> Gregory D. Orriss Chief of the Food Quality and Standards Service in the Food and Nutrition Division of the Food and Agriculture Organization of the United Nations available at <http://www.unu.edu/unupress/food/V192e/ch04.htm>

In addition, data from the WHO Nutrition Programme indicates that anaemia is a problem of moderate or serious public health significance in 11 PICs.<sup>4</sup> Vitamin A deficiency also poses a public health problem in some of these countries<sup>5</sup>.

Professor Gibson's study considered possible food vehicles for a fortification programme. It concluded that, in at least Fiji, Kiribati and New Caledonia, wheat flour consumption is high enough to make wheat flour a good candidate for a food fortification programme.

The impetus for food fortification programmes in the Pacific has been strengthened as a result of the mandatory flour fortification programme implemented recently in Fiji. Much of Fiji's flour will be exported to other PICs, which led WHO to identify an opportunity for establishing a formal, sub-regional programme for facilitating wheat flour fortification. Analysis indicates that fortification would be beneficial to a significant proportion of the region's population. WHO notes that:

*Considering that the prevalence of iron deficiency is estimated to be about 2.5 times the prevalence of anaemia (where iron deficiency is an important cause of anaemia), in those PICs where the prevalence of anaemia is at least 20-25 percent, and wheat flour and products are consumed in significant quantities, we can estimate that a flour fortification programme would be beneficial for about half the population (or more), as it would significantly increase intakes of iron and other micronutrients, all of which may contribute to anaemia (folic acid, B2, B6, B12, vitamin A and vitamin C).<sup>6,7</sup>*

## **1.2 Project scope**

In light of the above, this report was commissioned to consider the legal, policy and trade issues associated with these fortification options in the Western Pacific region.<sup>8</sup> The first stage of the report involved a stock-take of existing PIC legislation and policies in 21 countries to identify whether new or amended legislation would be required to facilitate a sub-regional programme for food fortification.<sup>9</sup>

---

<sup>4</sup> Fiji, French Polynesia, New Caledonia, Kiribati, Marshall Islands, Federated States of Micronesia, Papua New Guinea, Samoa, Solomon Islands, American Samoa and Vanuatu.

<sup>5</sup> Feasibility study for a sub-regional programme of fortification of wheat flour and other foods for Pacific Island Countries. Accessed on 15/03/06 at [http://www.micronutrient.org/IDPAS/2005%20SCN%20Report/Rosaling\\_Gibbon\\_WHO.pdf](http://www.micronutrient.org/IDPAS/2005%20SCN%20Report/Rosaling_Gibbon_WHO.pdf)

<sup>6</sup> WHO Terms of Reference for feasibility study for a sub-regional programme of fortification of wheat flour and other foods for Pacific Island Countries.

<sup>7</sup> It should be noted that vitamin A is not generally considered for flour fortification because of cost. The Flour Fortification Initiative recommends that fortification should have 'at least iron and folic acid' as a base.

<sup>8</sup> The terms of reference for the report are available on request.

<sup>9</sup> The countries were the Cook Islands, Fiji, French Polynesia (France), New Caledonia (France), Wallis and Futuna (France), Kiribati, Republic of the Marshall Islands, Federated States of Micronesia, Nauru, Tokelau

The stock take is intended to feed into a longer term project which has two objectives:

1. *To ensure that at least two thirds of PICs have adequate legislation, regulation, and/or standards that create an enabling environment for flour fortification, and that ensure protection of consumers.*
2. *To create a framework for harmonised standards for flour fortification to the greatest extent possible throughout the sub-region.*

Where it was possible, we examined the current legislation and regulatory frameworks of these PICs. In addition, we conducted a brief overview analysis of those non-regulatory policies with a possible impact on food fortification programmes, including nutrition-related policies and the monitoring of nutrition status. Finally, we briefly considered how trade agreements may impact on the establishment of food fortification programmes in the Pacific. Our full terms of reference are attached as appendix 1.

### **1.3 Methodology**

#### **Information retrieval**

The project team used a number of methods to access the information required for the stock take of relevant legislation and policies. In the first instance, we developed a questionnaire for distribution to in-country contacts provided by WHO. Regional Office for the Western Pacific (WPRO) facilitated the distribution of this questionnaire. We also contacted the countries involved by email and phone to seek further information and to ensure that the questionnaire was received by the person with access to the relevant information required for the stock take. The questionnaire is attached as appendix 2.

In addition, the team searched a range of relevant websites, including:

- the Pacific Islands Legal Information Institute (<http://www.paclii.org/databases.html>)
- the International Digest of Health Legislation (<http://www.who.int/idhl/> )
- the International Portal on Food Safety, Animal and Plant Health (<http://www.ipfsaph.com>)
- countries' own government websites
- the FAO's country profiles, located at [http://www.fao.org/ag/agn/nutrition/profiles\\_en.stm](http://www.fao.org/ag/agn/nutrition/profiles_en.stm)

---

(New Zealand), Niue, Republic of Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, American Samoa (USA), Guam (USA), Commonwealth of the Northern Mariana Islands (USA), Vanuatu.

- WHO's nutrition country profiles: <http://www.WHO.who.int/sites/nut/data/>

Based on this information, the project team constructed country profiles outlining the nutritional status of populations in the relevant countries, as well as the policies, legislation and trade agreements which impacted on those countries' nutritional status. The country profiles are attached as appendix 3.

We also undertook a brief search for literature on food fortification, nutrition and micronutrient malnutrition using the internet search engines google and googlescholar, and the academic databases Medline and Web of Science.

#### **1.4 Risks and limitations**

This project is limited to identifying the requirements for a regulatory and policy framework for food fortification in the Pacific. It does not include recommendations on such technical matters as the type, concentration, delivery mechanism(s) or likely benefits of fortificants. These matters need to be determined by expert opinion. More technical matters of this nature are raised in recent reports by Mr Bob Hughes and Dr Jacky Knowles of UNICEF, and this report should be considered in the context of those.

The project brief was to consider a fortification framework with regard only to flour fortification. In the event that flour is not the most effective vehicle for fortificants in a particular country or population group, the regulatory mechanisms for other foods will differ somewhat from those discussed here.

Our findings relate to the information that we were able to obtain within the timeframes and resources available for the stock-take. However, we had difficulty accessing some country-specific information, despite many attempts. We had particular difficulty accessing current legislation and information about whether legislation was being complied with in practice. We had similar difficulties in accessing information on current nutrition policies for a number of PICs. We also had difficulty accessing experts on regional trade agreements to provide feedback on our conclusions about the trade implications of food fortification.

There is also limited data available on a number of health-related issues in PICs, including the prevalence of micronutrient deficiencies, and the incidence of resulting health problems. The considerable variation between countries' reported deficiency prevalence, and the risk that some of the variations may be a reflection of limited data rather than low prevalence, has required us to take a broad, strategic approach to the development of fortification regulations. We recommend that further research be undertaken to address these information gaps.

Where we are aware of information gaps, these are clearly marked. The project team thus acknowledges that the information on which this report is based cannot be considered complete.

Finally, while this project focuses primarily on regulatory options, the project team notes that a supportive policy environment is necessary if fortification programmes are to reach their potential in improving public health in the Western Pacific.

## **Section 2: Establishing a Food fortification programme**

### ***2.1 Background and history of fortification***

Codex Alimentarius<sup>10</sup> defines food fortification as:

The addition of one or more essential nutrients to a food, whether or not it is normally contained in the food, for the purpose of preventing or correcting a demonstrated deficiency of one or more nutrients in the population or specific population groups.<sup>11</sup>

Fortification therefore differs from enrichment, which is the process of restoring the nutrients to a food removed during refinement or production.

Fortification commonly uses staple foods as vehicles to deliver micronutrients generally lacking in the diet of a population or, as is the case in some PICs, available in traditional foods but not contained in sufficient concentration in commonly consumed imported foods. While diet diversification and nutrition education therefore represent key additional strategies to address these micronutrient deficiencies, fortification represents a highly effective and economical means of rectifying these nutritional issues.

Fortification has been practiced since the 1930s. It has been used to target specific health conditions such as iodine deficiency through the iodisation of salt, anaemia through the fortification of cereals with iron and vitamins, and neural tube defects through the fortification of wheat flour with folic acid. In many instances, fortification has lowered the incidence of micronutrient-related illnesses that were previously common, and has, as a result, improved the health status (and also other key indicators, such as economic and educational status) of a large proportion of the population(s) involved.<sup>12</sup>

---

<sup>10</sup> The Codex Alimentarius Commission, working under the WHO and FAO, is responsible for developing food standards, guidelines and related texts such as codes of practice. A number of PICs are members of the Codex Commission and take part in Commission meetings and events.

<sup>11</sup> Codex Alimentarius, 'General Principles for the Addition of Essential Nutrients to Foods' CAC/GL 09-1987 (amended 1989, 1991). Accessed online at [http://www.codexalimentarius.net/download/standards/299/CXG\\_009e.pdf](http://www.codexalimentarius.net/download/standards/299/CXG_009e.pdf)

<sup>12</sup> Darnton-Hill and Nalubola 2002; Venkatesh et al 2004.

Food fortification is not, however, a stand-alone solution to micronutrient deficiency, and must be carefully managed. To be safe and effective, fortification programmes must:

- Deliver additional micronutrients to the target population with sufficient frequency to be effective, and
- Be designed to minimize the threat of overdose, particularly where fat soluble vitamins are involved.

Technical guidelines, backed up by regulatory frameworks, are therefore critical to ensuring that food fortification programmes achieve their desired benefits. Any regulatory measures should also be supported by a strong policy framework that promotes a comprehensive approach to improving nutrition and health, and by the regulatory infrastructure of a country.

## **2.2 *General principles for food fortification***

There are a number of general principles that must be considered in introducing a food fortification regime. In 1995, the FAO convened a technical consultation on food fortification, focusing on technology and quality control. The consultation agreed that, ideally, fortified food should:

- Be commonly consumed by the target population
- Have constant consumption patterns with a low risk of excess consumption
- Have good stability during storage
- Be relatively low in cost
- Be centrally processed with minimal stratification of the fortificant
- Have no interaction between the fortificant and the carrier food
- Be contained in most meals, with the availability unrelated to socio-economic status
- Be linked to energy intake.

In addition, the Codex Alimentarius Commission has adopted the *General Principles for the Addition of Essential Nutrients to Foods* which state:

- The essential nutrient should not result in an adverse effect on the metabolism of any other nutrient
- Addition of essential nutrients should not be used to mislead or deceive the consumer as to the nutritional benefit of the food
- Methods of controlling, measuring and/or enforcing the levels of added essential nutrients in foods should be available
- Food standards, regulations or guidelines for fortification should identify the effectual nutrients which are to be required, and the levels at which they should be present in the food to achieve their intended purpose.

The last bullet point above highlights that safe and effective fortification programmes must be based on up-to-date and accurate information about the deficiencies in a population, and the likely resultant health effects of fortified food.

### **2.3 *Regulatory requirements***

Implementing the general principles of section 2.2 requires the existence of an appropriate regulatory system in place. Generally speaking, regulatory controls for food should protect consumers against inadequately packaged or labelled foods, nutritionally poor or unsafe foods. Such provisions provide the cornerstone of any food safety legislation and are necessary whether a country opts for mandatory or voluntary fortification (see further the discussion in section 2.4.4).

Regulations also provide producers and importers with clear requirements which, when applied properly, create a level commercial playing field. As considered below, this is particularly important in the small Pacific market if PICs are to adopt a regional fortification standard.

The FAO and WHO have recommended that the following principles should be considered when developing legislation for food fortification:

- Fortification should always be in the best interests of the selected population
- There should be input from interested parties in the development of the law and regulations
- Fortification must be supported by appropriate food safety and quality standards.

In addition, any law dealing with fortification should:

- Clearly set out what is required or prohibited by the law, including setting the standards that must be met by fortified foods
- Allow flexibility (making it easy to change regulations to reflect changes in circumstances or population health status)
- Allow for food fortification generally, rather than prescribing fortification of specific items with specific nutrients (this is because a country may wish to change a fortification vehicle or nutrient in response to changes in health status)
- Contain enforcement provisions, including adequate inspection and sampling powers to allow the safety and efficacy of fortified food to be monitored and enforcement action to be taken
- Set out penalties for non-compliance with regulatory requirements
- Support non-regulatory policy approaches to micronutrient deficiencies, such as promotion of locally-grown/traditional nutrient-rich foods; preventive supplementation programmes for high risk groups; national nutrition plans and policies; health promotion initiatives and creation of physical environments that support good nutrition

## ***2.4 Policy work which must be carried out before legislation can be developed***

In light of the above, it is clear that a country must take various steps before introducing legislation to facilitate or mandate food fortification. In particular, a country must confirm that there is a need for legislation and it must ensure that legislation is tailored to its particular needs and circumstances.

### **2.4.1 Problem identification**

First, a country needs to have a clear understanding of the nature of the nutrition problem it wishes to address. Such information is necessary to allow for informed decision-making in successfully developing and implementing a programme. Information should be gathered about the following matters:<sup>13</sup>

- The extent and severity of the problem (e.g. is the deficiency marginal, moderate, or severe?)

---

<sup>13</sup> Adapted from: USAID Micronutrient Program 2000; Food Standards Australia New Zealand 2005; International Life Sciences Institute 1997; New Zealand Ministry of Economic Developments Generic Policy Development Process 1996.

- Whether the deficiency affects different demographic groups in a population (e.g. different age groups, genders, people living in urban or rural areas or people with different socioeconomic status), so that, food vehicles to target these populations can be selected if necessary.
- The major causes of the deficiency
- The implications of the problem for the population (or for parts of the population)
- The commitment of government and producers to addressing the problem. Advocacy from partner organizations may be necessary to ensure that decision makers are committed to developing sustainable programmes.
- The resources (industry, government, donor agency, private) available to implement a fortification programme (including ascertaining whether there is money in the government's budget for running the programme or whether donor funds may be available).<sup>14</sup>

It may not be possible to obtain all the data identified above without additional data collection exercises. However, coordinated efforts between all involved agencies would allow existing data to be pooled, which might make it possible to proceed without embarking on new data collection exercises. In addition, a Pacific regional approach to fortification, would allow information and resources to be shared, so allowing a programme to start without exhaustive further studies.

#### **2.4.2 Deciding upon the most appropriate intervention**

Once the problem has been identified, the next major step is to determine how best to resolve the micronutrient problem in a way that meets the needs of the country and in a way which is sustainable. While the mechanics of this process are beyond the scope of the present report, extensive work has been presented in the reports by Mr Bob Hughes and Dr Jacky Knowles, outlining possible appropriate interventions. Those reports should be used as an introduction to these more technical issues.

---

<sup>14</sup> Involving producers, importers and exporters in the cause of fortification is vital. Important lessons can be learned from the example of the Flour Fortification Initiative, which has worked to combine the resources of public and private sectors throughout the world. See [http://www.wsahs.nsw.gov.au/folate/documents/FFI\\_Summary.pdf](http://www.wsahs.nsw.gov.au/folate/documents/FFI_Summary.pdf)

### 2.4.3 Mandatory or voluntary fortification?

Food fortification programmes can be implemented on either a voluntarily (with producers choosing to be involved), or a mandatory basis. A voluntary approach *enables* fortification, while mandatory regimes *require* it.

A detailed examination of the pros and cons of using voluntary or mandatory fortification for addressing iron deficiency on a country by country basis was beyond the scope of this report. Countries will therefore need to make their own assessment on which model is most likely to address the needs of their populations. UNICEF and WHO can provide technical advice to help guide this assessment.

In general we note that voluntary regimes tend to be more suited for countries with:

- An existing regime of food safety and quality standards, which could accommodate implementation of a voluntary regime
- Means of controlling price and/or supporting producers to limit any price differential between fortified and non-fortified products
- Nutrition education and/or supplementation programmes that have been proven effective and are sustainable over the long term
- Sustainable, readily accessible supplies of fortified foods for all population groups.

We assume that the circumstances listed above are unlikely to be in place in many Pacific countries. We therefore conclude that on balance the universal coverage offered by a mandatory flour fortification programme would seem to have the greatest potential to address iron deficiencies in Pacific populations.

### 2.4.4 Implementation

Once a decision is made to develop a fortification programme, a plan for implementing the programme should be developed.

The fortification plan should include details on:

- Programme background, including a description of the problem the intervention intends to solve
- The goals and objectives with a clearly defined target population

- The characteristics and components of the programme, including development of activities and necessary resources (human, material, financial, and technical assistance)
- Development of partnerships between key players, and responsibilities for maintaining those partnerships over the long term.
- Quality control, inspection, and monitoring systems
- How to prepare and implement any proposed new or modified legislation and regulations that will facilitate the programme
- The strategies that will be used to ensure compliance with the programme
- An evaluation plan, including processes to feed results back to *all* participants, and with a focus on informing responsive and sustainable interventions
- The reports to be produced about the programme, the dates they are due, and who will use them and how

(Note: while the identification of appropriate vehicle food(s) is a key step in any programme, this is a technical decision not covered in depth in this report.)

While the initial impetus for a fortification programme will require a lead agency (likely to be the Ministry of Health), an effective fortification plan requires active participation, from the outset, of a range of groups: other government institutions (such as commerce, trade, customs, agriculture and education), private sector partners involved in food production or importation, and consumers. Failure to involve participants from across the sector will significantly reduce the extent to which a programme is sustainable.

## ***2.5 Non-regulatory approaches to support fortification***

Non-regulatory mechanisms are important in the establishment and maintenance of a food fortification programme to ensure that a programme is:

- Sustainable and ongoing, and supports consumer knowledge of and demand for fortified products
- Supported and overseen at a national (and potentially regional) level

- Multi-faceted, so that (for example) consistent information is available to a range of audiences through selected media and sources (via the school curriculum, at point of purchase, through local media, etc).
- Tailored to address identified micronutrient deficiencies
- Responsive to local needs
- Consistent with other local, regional and national nutrition programmes.

Non-regulatory mechanisms have a potentially broad impact, as they can be designed to support a range of other public health interventions alongside fortification. National Nutrition Policies and Plans of Action are examples of initiatives that can help to create an environment supportive of fortification in the wider context of improving a population's nutrition and health status.

### **2.5.1 Health promotion initiatives**

Nutrition-related health promotion programmes already exist in most PICs, and have the potential to provide important support to fortification programmes. For example, no regulatory framework should (or likely could) require people to eat certain foods, or limit availability to the point that choice is effectively removed. Health promotion programmes provide a non-regulatory method of educating and enabling consumers to make informed choices about nutrition. This can include explaining the rationale for fortification, and how it might benefit consumers individually and as a society.

### **2.5.2 Monitoring**

Regular, rigorous monitoring is critical to ensuring that food fortification programmes are safe and effective. Ongoing monitoring of product quality, quantity and distribution, nutrition status and consumption patterns should be carried out for the purpose of:

- Measuring the efficiency of the programme
- Correcting any quality control issues as they arise
- Identifying critical issues, such as emerging deficiencies in population groups not previously targeted
- Identifying changing consumption patterns that might affect the efficacy of a programme.

Monitoring also needs to take account of programmes that support food fortification; for example evaluating the process of developing and implementing local and regional health promotion and policy-based initiatives. Lessons learned through monitoring can be shared across programmes to improve service delivery at all levels.

## **Section 3: Food fortification in the Pacific**

### ***3.1 Current food fortification practices in PICs***

Fortified wheat flour is currently available in some parts of the Western Pacific as packaged flour, and in products such as biscuits that contain fortified wheat flour.

Some of this flour is fortified in the Pacific. Since 2003, fortified flour has been produced by the Industry Flour Mills of Fiji (FMF), while other flour is fortified at a mill in New Caledonia. Flour from the Fijian mill is fortified with iron, riboflavin, thiamine, niacin and folic acid as a response to high rates of anaemia in Fiji. This fortification programme is supported by legislation. Fiji exports flour to six other PICs: Tonga, Samoa, Vanuatu, Wallis and Futuna, French Polynesia and Kiribati, while Tuvalu is likely to begin importing fortified Fijian flour in the near future.

Anaemia is common in these PICs, so that importing wheat flour from Fiji has potentially positive health impacts for them. FMF exports fortified flour even when the order has not specifically asked for fortified product. If these importing countries wish to continue to receive the health benefits of fortification, they should ensure that all orders to FMF – and other exporters – specifically ask for fortified product.

Fortified flour, and products produced from fortified flour, also come to PICs from outside the Pacific Islands: from Australia, New Zealand, the United States of America, and Indonesia (instant noodles). Product from most of these countries is generally subject to fortification standards (where a customer requests that the flour be fortified). In Australia and New Zealand, FSANZ Standard 1.3.2 permits iron to be voluntarily added to biscuits, bread, breakfast cereals, cereal flours and pasta (among other things). In the United States, flour is subject to mandatory iron fortification for the domestic market, although US producers are unlikely to supply fortified flour to a third country unless it is specifically ordered.

The food regulatory regimes of these exporting countries have significant potential flow-on effects to the wider Western Pacific region, since many of their fortified products, and foods produced from fortified products, are imported by PICs. These include flour, cereals, and pasta, but also other fortified products like milk. While such fortification benefits may be somewhat haphazard, PICs also receive benefits in terms of overall food safety and quality, because standards governing food

safety and quality in New Zealand, Australia and the USA apply equally to products produced for domestic consumption and export.

### **3.2 Current legislative and regulatory arrangements for flour fortification in the Pacific**

A major task for our project has been to examine existing legislation in PICs applicable to flour fortification. As part of our review we looked for three aspects:

- Whether there were any existing regulatory regimes in the Western Pacific specifically mandating or requiring flour fortification
- Where a PIC had no specific legislation dealing with flour fortification, whether the country's existing food legislation would nonetheless allow the importation and sale of fortified flour and flour products
- Whether existing food legislation in PICs met the criteria discussed in section 2.3 of this paper.

#### **3.2.1 Our findings**

Subject to the legislative gaps outlined in section 1.4 above, Fiji seems to be the only country in the Western Pacific region which has specific legislation dealing with flour fortification. After analysing Fiji's legislation, we consider it a useful template for any PIC considering developing its own food fortification legislation. Section 6 of Fiji's Food Safety Act 2003 allows standards to be prescribed with respect to the fortification of any food *"if such fortification is based on scientific evidence showing its benefit to health"*.

We consider that this formulation has considerable benefits and note that it meets a number of the key criteria for food fortification legislation identified in section 2.3, in that it is enabling, flexible and allows clear standards to be set. Fiji's Act also contains provisions relating to monitoring and enforcement, which we consider essential for implementing an effective fortification programme.

Our analysis of available legislation in other PICs covered by this study reveals that:

- Although no legal impediment seemed to prevent the importation or sale of fortified flour or flour products, the food legislation of most PICs had deficits when measured against the criteria discussed in section 2.3. Crucially, there seem to be no clear standards which fortified flour must meet before it can be imported or sold

- Many PICs have outdated food laws and standards
- There is considerable variation in the quality of the regulatory infrastructure available for food safety in PICs (for example there is considerable variation in terms of the resources and trained staff available for monitoring and enforcement of food legislation)
- Import and export inspections are variable, so that much food is traded without adequate controls (WHO 2003).

All these factors will have an impact on any future food fortification programme in the region. In our view, any work that is carried out to develop new legislation to mandate flour fortification in the region should be supplemented by work to:

- Update PIC food legislation
- Strengthen PICs' regulatory infrastructure and capacity (in line with WHO/FAO's current work on infrastructure and capacity in the region).

Table 1 summarises our findings with regard to food legislation in the PICs covered by this project.

**Table 1: summary of current food-related regulatory framework in the PICs<sup>15</sup>.**

	Does the PIC have legislation which allows, or requires flour fortification?	Are there standards for flour fortification with respect to:					Nutritional or health claims regulated?	Regimes for imported/exported fortified foods?
		Flour composition	Fortificant composition	Fortificant level	Packaging	Labelling		
<b>American Samoa</b>	No specific legislation	N/A	N/A	N/A	N/A	Yes - general	Powers are available to regulate claims	Powers available?
<b>Commonwealth of the Northern Mariana Islands</b>	? Pure Food, Drug and Cosmetic Device Act 1998	N/A	N/A	N/A	Yes - general	Yes - general	?	Yes - general
<b>Cook Islands</b>	No	N/A	N/A	N/A -	N/A	N/A	?	?
<b>Federated States of Micronesia</b>	? National Food Safety Act 1991	N/A	N/A	N/A	Yes – general	Yes - general	Yes- general	Regulation-making powers available
<b>Fiji</b>	Yes	For white flour	Yes <sup>16</sup>	Yes <sup>17</sup>	Yes-general	Yes-general	Yes – general requirements	Yes – general requirements

<sup>15</sup> The following table is based on information provided by WHO countries as a result of the questionnaire distributed by the project team and supplemented by advice from the FAO, WHO and various experts involved in food or nutrition related issues in the Asia Pacific region. In many cases the project team was unable to ascertain what legislation or standards were in existence, as evidenced by N/A (not available) text in the table above. The project team anticipates that the information above will be confirmed and expanded upon after discussions with countries at the April meeting

<sup>16</sup> The *Fiji Islands Gazette Supplement* 14 December 2003 lists calculations for minimum standards for enriched wheat flour, and suggestions for regulation governing the fortification of wheat flour

<b>French Polynesia</b>	No	N/A	N/A	N/A	N/A	N/A	No	No
	<b>Prohibits, allows, mandates flour fortification?</b>	<b>Are there standards for flour fortification with respect to:</b>					<b>Nutritional or health claims regulated?</b>	<b>Regimes for imported/exported fortified foods?</b>
		<b>Flour composition</b>	<b>Fortificant composition</b>	<b>Fortificant level</b>	<b>Packaging</b>	<b>Labelling</b>		
<b>Guam</b>	US federal law applies. US Federal law requires the fortification of flour	Yes	Yes	Yes	Yes – general	Yes – general	Yes – US from federal law	?
<b>Kiribati</b>	? Pure food ordinance 1977	N/A	N/A	N/A	N/A	Yes – general	Yes-general	No
<b>Marshall Islands</b>	No	N/A	N/A	N/A	N/A	N/A	No	No
<b>Nauru</b>	No	N/A	N/A	N/A	N/A	N/A	No	No
<b>New Caledonia</b>	No	N/A	N/A	N/A	N/A	N/A	No	No
<b>Niue</b>	No	N/A	N/A	N/A	N/A	N/A	No	No
<b>Palau</b>	No	N/A	N/A	N/A	N/A	N/A	No	No
<b>Papua New Guinea</b>	? Food Sanitation Act 1991	N/A	N/A	N/A	Yes – general	Yes – general	No	General. All salt must be iodised.

<sup>17</sup> The *Fiji Islands Gazette Supplement* 14 December 2003 lists calculations for minimum standards for enriched wheat flour, and suggestions for regulation governing the fortification of wheat flour

	Fortified rice prohibited without written permission							
<b>Samoa</b>	No	N/A	N/A	N/A	Yes – general	Yes – general	Yes	Yes – general.

	Prohibits, allows, mandates flour fortification?	Are there standards for flour fortification with respect to:					Nutritional or health claims regulated?	Regimes for imported/exported fortified foods?
		Flour composition	Fortificant composition	Fortificant level	Packaging	Labelling		
<b>Solomon Islands</b>	? Pure Food Act 1996	N/A	N/A	N/A	RMPs available	RMPs available	?	?
<b>Tokelau</b>	Health Act 1981?	N/A	N/A	N/A	N/A	N/A	?	?
<b>Tonga</b>	No	N/A	N/A	N/A	indirect	indirect	Yes - general	Regulation-making powers available
<b>Tuvalu</b>	No	N/A	N/A	N/A	N/A	N/A	No	Indirect – price controls on commodities related to fortification
<b>Vanuatu</b>	No	N/A	N/A	N/A	Yes - general	Yes - general	?	Yes - general
<b>Wallis &amp; Futuna</b>	No	N/A	N/A	N/A	N/A	N/A	No	No

### 3.3 Trade issues

#### 3.3.1 The impact of trade agreements on food fortification proposals

Any food fortification programme developed for the Western Pacific will need to take account of PICs' international trade obligations. These include the World Trade Organization (WTO) Agreements, the Pacific Island Countries Trade Agreement (PICTA), the Pacific Agreement on Closer Economic Relations (PACER), the Cotonou Agreement, and various Compacts of Free Association with the United States of America.<sup>18</sup> This section of the paper offers a general guide to the trade issues faced by PICs considering a fortification programme. In each case, PICs should ensure that they obtain advice on the trade implications of a planned food fortification programme. Sources of advice include their own trade officials, and such partner agencies as the Forum Secretariat, the FAO and WHO.

#### WTO obligations

The broad principles of the WTO Agreements are found in the General Agreement on Tariffs and Trade (GATT) established in 1948. The two key WTO principles are:

- (i) non-discrimination between trading partners (known as the 'Most-favoured-nation' principle), and
- (ii) non-discrimination between imported and locally-produced goods (known as 'national treatment') (WTO 2002).

These two principles require that, for the purposes of trade, all goods must be treated alike, irrespective of their origin. Signatories must open their borders to products from all other countries, and not implement measures that have the effect of favouring domestic products over imported products.

These principles do not apply in all cases. Special provisions have been adopted in relation to WTO members that are "developing countries" or "least developed countries", and in relation to regional trade agreements such as PICTA, which allow developing countries and least developed countries greater flexibility in implementing certain WTO rules.<sup>19</sup> Subject to certain conditions, these regional

---

<sup>18</sup> Fiji, PNG, Solomon Islands and Tonga are **WTO members**, while Samoa and Vanuatu are applying for membership. The Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu are **PICTA members**. Those twelve countries, plus Tuvalu and the Marshall Islands, are also **PACER members** (see PICTA and PACER Status Reports, at February 2006, <http://www.forumsec.org.fj>). Those 14 countries are also all parties to the **Cotonou Agreement**. Palau, the Federated States of Micronesia and the Republic of the Marshall Islands have each entered into **Compacts of Free Association with the USA**.

<sup>19</sup> See "Decision on Differential and More Favourable Treatment Reciprocity and Fuller Participation of Developing Countries", 28 November 1979 (L/4903), at [http://www.wto.org/english/docs\\_e/legal\\_e/enabling\\_e.pdf](http://www.wto.org/english/docs_e/legal_e/enabling_e.pdf); GATT 1994 Art XVIII ("Governmental Assistance

trade agreements are permitted, even though, by granting more favourable trade conditions to the parties to the regional agreement than to other WTO members, the agreements depart from the guiding principles of non-discrimination.

There are also exceptions to these principles which allow member countries to protect the health of their populations. Under article XX(b) of the GATT, countries may adopt trade measures ‘necessary to protect human, animal or plant life or health’. The burden of proving that a trade restrictive measure falls within this exception lies with the country that has implemented the regulatory intervention.<sup>20</sup> The regulation must meet a two-stage test:

1. The country must show that the health measure is **necessary** – that is, that it is **effective** and that **no less restrictive** trade measures were available to achieve the same public health purpose; and
2. If the measure is proven necessary, the country must show that it does not constitute a ‘disguised restriction on international trade’ or ‘arbitrary or unjustifiable discrimination’.<sup>21</sup>

### **The Agreement on Technical Barriers to Trade (TBT Agreement)<sup>22</sup>**

The TBT Agreement focuses on technical regulations, which can include matters such as product composition, labelling and packaging. Thus, it is perhaps the WTO agreement most relevant to food fortification issues.<sup>23</sup>

Under the TBT Agreement, WTO members must base any domestic technical regulations and standards on existing international standards, or international standards whose completion is imminent, unless to do so would be ineffective or inappropriate due to differences in things like climate, geography, or technology.<sup>24</sup> Where a domestic technical regulation complies with an international standard, it is presumed not to pose an unnecessary trade barrier.<sup>25</sup> Thus, a country which based its fortification regulations on an international standard, such as the Codex Principles for the Addition of Essential Nutrients to Foods,<sup>26</sup> would be presumed to be acting according to the TBT Agreement.

---

to Economic Development”); GATT 1994 Part IV (“Trade and Development”); “Decision on Measures in Favour of Least-Developed Countries” adopted by the Trade Negotiations Committee on 15 December 1993/14 April 1994, at [http://www.wto.org/english/docs\\_e/legal\\_e/31-dlldc.doc](http://www.wto.org/english/docs_e/legal_e/31-dlldc.doc); and “Guide to the Uruguay Round Agreements”, Part Five (“Developing Countries in the WTO System”), at [http://www.wto.org/english/docs\\_e/legal\\_e/guide\\_ur\\_deving\\_country\\_e.pdf](http://www.wto.org/english/docs_e/legal_e/guide_ur_deving_country_e.pdf).

<sup>20</sup> Article XX(b) of the GATT.

<sup>21</sup> [http://www.wto.org/English/res\\_e/booksp\\_e/analytic\\_index\\_e/gatt1994\\_07\\_e.htm#articleXX](http://www.wto.org/English/res_e/booksp_e/analytic_index_e/gatt1994_07_e.htm#articleXX); Shaffer, Brenner and Houston 2005

<sup>22</sup> See [http://www.wto.org/english/docs\\_e/legal\\_e/17-tbt.pdf](http://www.wto.org/english/docs_e/legal_e/17-tbt.pdf)

<sup>23</sup> Rose Nathan, Food Fortification Regulations In Light of the WTO Agreements

<http://www.gphls.com/documents/WTORPT3.pdf>

<sup>24</sup> Agreement on Technical Barriers to Trade. 1994. Articles 2.3 and 2.4

<sup>25</sup> Agreement on Technical Barriers to Trade. 1994. Article 2.5

<sup>26</sup> CAC/GL 09-1987.

A country is also required to consider adopting technical regulations belonging to other countries, provided that these fulfil the country's 'legitimate objectives'.<sup>27</sup> For food fortification, this means that a country may decide to adopt technical regulations from an exporting country if the exporting country's requirements are consistent with the objectives of the fortification programme concerned.

### **The Agreement on the application of Sanitary and Phytosanitary measures (the SPS Agreement)**

The SPS Agreement regulates measures (SPS measures) imposed for the protection of human, animal or plant life or health against certain risks, including risks arising from additives, contaminants or toxins in food or beverages. It might therefore have relevance to fortification measures.

Under the SPS Agreement, all SPS measures must be scientifically justified, supported by sufficient scientific evidence, and applied only to the extent necessary to protect human, animal or plant life or health. As with the TBT Agreement, SPS measures conforming to relevant international standards are deemed automatically compliant with the requirements of the SPS Agreement. Further, any measure complying with the SPS Agreement is automatically deemed to satisfy the conditions of article XX(b) of the GATT, i.e. to be "necessary to protect human, animal or plant life or health".

### **Pacific Island Countries Trade Agreement (PICTA)**

PICTA is a regional free trade agreement among the member countries of the Pacific Islands Forum, excluding Australia and New Zealand. PICTA governs trade among the parties in goods that have a certain level of local content, so that under the PICTA "Rules of Origin", the goods are deemed to originate in the territory of a PIC.<sup>28</sup>

As well as requiring member countries to remove tariff barriers to trade, PICTA requires members to remove all import or export prohibitions and other restrictions.<sup>29</sup> Thus, under PICTA, goods imported into the territory of a party from the territory of another party must be treated no less favourably than domestic products in respect of internal taxes and charges, and all requirements affecting the goods' internal sale, distribution, transportation or use. Like the WTO agreements, PICTA also creates exceptions to its rules, the most relevant here being the right of a member country to claim that a restriction is necessary to protect human health.<sup>30</sup>

---

27 Agreement on Technical Barriers to Trade. 1994. Article 2.7

28 The Rules of Origin and local content criteria are contained in PICTA, Annex 1. See also articles 4 and 5.

29 Ibid, Article 9.

30 Article 16(1)(b) of PICTA.

The obligation on PICTA parties to eliminate import restrictions should probably be construed broadly. Regulations which could be considered to restrict imports would thus include technical regulations, such as those governing product characteristics or their production methods. This would probably cover food fortification regulations. It is therefore important that parties carefully consider the trade implications of any fortification measures they introduce. However, there is scope to work regionally on these matters. PICTA requires parties to consider harmonizing their laws, regulations and administrative practices in a way that will facilitate trade in the PICTA free trade area.<sup>31</sup> A regional approach to fortification is therefore likely to minimize the potential for objections that fortification is restricting trade between PICTA countries.

### **Pacific Agreement on Closer Economic Relations (PACER)**

PACER is an international treaty that was concluded on the same date as PICTA, and is open to signature and ratification by all of the parties to PICTA, as well as Australia and New Zealand. PACER obliges parties to establish detailed programmes to implement trade facilitation measures.<sup>32</sup> The measures must, as far as practicable, be consistent with other regional and international trade facilitation initiatives.

In relation to SPS matters, customs procedures and standards, article 10 of PACER requires parties who are WTO members to treat all other PACER parties no less favourably than they are required to treat other WTO members. This means that PACER parties could challenge fortification measures which favour WTO members over them.

### **The Cotonou Agreement**

The Cotonou Agreement between the signatory PICs and the European Union (EU) requires the PICs, in their trade with EU countries, to grant the EU treatment “no less favourable than most-favoured-nation treatment”.<sup>33</sup> This obligation does not, however, require the PICs to treat EU countries as favourably (in trade terms) as other developing countries, or other States belonging to the African, Caribbean and Pacific (ACP) Group of States with whom the EU has entered into the Cotonou Agreement.

### **Compacts of Free Association with the USA**

The Compacts between the USA and the Federated States of Micronesia and the Republic of the Marshall Islands require all USA products imported into the

---

<sup>31</sup> Ibid, Art 18.

<sup>32</sup> PACER, Art 9.

<sup>33</sup> Cotonou Agreement, Annex V, Chapter 1, Art 5(1)(a). Most-favoured-nation treatment requires that no other trading partner receives preferential treatment.

territories of these Pacific Island countries to receive “treatment no less favourable than that accorded like products of any foreign country”.<sup>34</sup>

In addition, the Compacts require that, before entering into consultations on, or concluding, a free trade agreement with any other government, the Pacific Island parties must consult with the USA regarding “whether or how” their obligations to treat products from the USA no less favourably will be applied.

### **3.3.3 Application of trade agreements to fortification programmes**

Preliminary analysis of these trade agreements suggests that a well-designed fortification programme should be defensible in the unlikely event that it is challenged on trade grounds. Various food fortification programmes have been established around the world, and none has been challenged on trade grounds.

First, fortification programmes are prima facie defensible as necessary to protect human health under article XX(b) of GATT. Where a country has a clear rationale and evidential basis for its fortification regime, a good argument exists that the conditions of article XX(b) are met.

Secondly, the existence of widespread national and international standards for fortification minimizes the possibility of challenges under the TBT Agreement. Most of the wheat flour imported into the Western Pacific comes from countries with existing standards for fortification. Thus, if flour importation from these countries delivers a fortified product that meets the public health objectives of importing PICs, then a PIC can recognize the standards applicable in the exporting country as a precondition for importation and sale of flour from that source. In that manner, the requirements of international agreements are likely to be fulfilled by this arrangement. Under this approach it is possible that a PIC would need to recognize multiple standards. It would also need a system for ensuring that imported flour was tested or certified, in order to ensure compliance with the standard applicable in its country or origin.

As well as recognising, where appropriate, exporting nations’ standards for fortification, PICs could also impose fortification requirements based on international standards. There are a number of Codex standards relevant to the fortification of foods:

- Codex General Principles for the Addition of Essential Nutrients to Foods (GL9-1987)
- Codex General Standard for the Labelling of Prepackaged Foods [Codex Stan1-1985 (Rev. 1-1991)]

---

<sup>34</sup> Compacts Of Free Association, As Amended, s. 244.

- Codex General Standard for the Labelling and Claims for Pre-packaged Foods for Special Dietary Uses (Codex Stan 146-1985)
- Codex General Guidelines on Claims (CAC/GL 1-1979 Rev. 1-1991)
- Codex Guidelines on Nutritional Labelling (CAC/GL 2-1985)  
Recommended International Code of Practice: General Principles of Food Hygiene [CAC/RCP 1 (Rev. 2-1985)]
- Guidelines on the Application of the Hazard Analysis Critical Control Point (HACCP) System (CAC/ GL 18-1993)

If a PIC's regulatory requirements relied upon these standards, then, under at least the WTO Agreements, this would create a presumption that the PIC's requirements complied with the requirements of the trade agreements.

Codex does not, however, deal with all matters relating to food fortification. It leaves some matters to the discretion of individual countries, such as the vehicle for fortification, and the levels of fortificant. Given this, a harmonised regional standard would help to eliminate any difficulties arising from different uses of that discretion. It would also be in accord with the trade facilitation aims of the PACER agreement if all PICs operated the same standards for fortification.

In summary, we therefore consider that a regional fortification standard, based on international standards is highly unlikely to create trade difficulties for PICs, though care is still required in implementing the regional standard at a local level. Nonetheless, fortification regulations and enforcement processes to implement them are unlikely to create trade barriers if:

- The standards on which the regulations are based comply with relevant Codex standards (unless there is evidence that the international standard is inappropriate or ineffective). As indicated, we recommend the adoption of a regional standard.
- The standards are evidence-based. PICs should be able to cite robust research, demonstrating that there is a significant public health problem which will be met by the proposed regulatory solution. The research already conducted into Pacific nutrition would be of importance here.
- The standards are proportionate. PICs should be able to show that any trade restrictions are a proportionate response to the public health problem. Otherwise they risk being declared arbitrary.
- The standards are the least restrictive available. PICs should be able to show that the proposed fortification programme is the least restrictive,

viable intervention available to meet the public health problem at issue (compared to other possible approaches, such as dietary diversification).

- The same requirements are imposed on local and imported products.

### **3.4 Non-regulatory frameworks in the PICs**

As indicated in section 2.5 above, regulations that require or enable the fortification of foods to address micronutrient malnutrition need to be complemented by non-regulatory measures. Such non-regulatory measures can include policies and programmes designed to encourage the consumption of nutritious, locally grown food, as well as programmes for monitoring a population's health status on an ongoing basis. These measures are an important part of ensuring that regulations around fortification are well supported, consistent with other nutrition-related initiatives, and are safe and beneficial for the populations involved. While a regional standard would create certain common conditions across the region, the non-regulatory environment varies enormously between countries. Careful work would thus be needed to ensure that fortification was supported as best appropriate in each country.

Bearing in mind the importance of non-regulatory measures for nutrition improvement, we carried out a brief survey of PICs' capacity to support food fortification programmes through non-regulatory policies and programmes.<sup>35</sup> Through this survey, we found that:

- Most PICs had a recent NPAN or NCD plan which included planned activities designed to address poor nutrition
- Most PICs also have national dietary guidelines, although sometimes these relate only to a single population group (e.g. children and mothers). We note that, while specific elements of these guidelines have been evaluated, their overall effectiveness has never been assessed.
- A number of PICs had functioning food or nutrition committees, although in some countries these committees had not met for some time
- A number of countries undertook regular monitoring of nutrition-related health status with many taking part in STEPs surveys
- Very few PICs participate in CODEX.

If a fortification programme was implemented, all these areas would require work to ensure that the programme worked as effectively as possible.

---

<sup>35</sup> (NB: A Table summarising PICs' national nutrition related policies is available on request to us)

### **3.4.1 Recommendations concerning non-regulatory matters**

A PIC that wishes to incorporate our recommended regional fortification programme into domestic law will need to revise its NPAN or NCD plan to reflect the fortification programme and to include non-regulatory activities necessary to support the programme. This may involve linking the programme to existing (or intended) activities in the plan or introducing new ones.

A PIC with no functioning nutrition committee may also need to reactivate it as a focal point for planning, implementing and monitoring the fortification programme.

WHO and other partner agencies may need to provide PICs with assistance in these activities. Assistance may also be required in evaluating the effectiveness of current dietary guidelines used by PICs as well as assisting with activities designed to improve the uptake of the guidelines.

Lastly, we recommend that work be carried out to assess whether the STEPs survey instrument would provide a useful means of monitoring the effectiveness of food fortification programmes running in the Western Pacific Region.

## **Section 4: Steps toward food fortification in the Pacific**

This report is necessarily high-level and strategic. Further work by each PIC will be necessary when that country is considering how to implement a food fortification programme. This will involve working through the policy, legal and trade issues discussed in this paper.

Nonetheless, we believe that the process of implementing domestic regulatory arrangements for food fortification would be considerably simplified by the promulgation of a regional fortification standard. In addition the work carried out by Fiji in establishing its domestic flour fortification programme should provide a valuable resource to any country wishing to establish its own domestic programme.

Recent studies undertaken for WHO suggests widespread deficiencies in a range of micronutrients (Hughes, 2006; Knowles 2005; Gibson, 2005) warranting a regional approach to fortification. While care is obviously needed to ensure safety and to minimize the risk of over-nutrition, we believe that it will be possible for a safe regional standard to be formulated, addressing key micronutrient deficiencies across the Western Pacific. If the technical work on fortification standards is performed by international experts, individual countries will then be able to focus on adopting the regional standard into domestic law, including the design of implementation, monitoring and enforcement measures.

There have been concerns that a regional approach would not pay sufficient attention to conditions in the individual PICs. However, it would be possible to design a standard in such a way as to meet the deficiencies pertaining generally in the Pacific. While such a standard should still be based on evidential data, the draft WHO Fortification Manual notes that large surveys are not necessary in fortification programme planning, provided that the data are representative of stratified samples of the targeted population.<sup>36</sup> While additional data are always desirable, there various experts are prepared to recommend the urgent formulation of a Pacific fortification standard, without the necessity for further studies. The standard can be modified in future, as further data come to hand.

A regional standard has the further advantage of allowing for incremental improvements in the nutritional data without the need for legislative amendment in each country that has adopted the standard. That is, if a country's domestic law refers to a regional standard as the basis for its domestic requirements, then changes to the standard will automatically be reflected in domestic law as it occurs.

Domestic implementation of a regional standard obviously raises other issues. We anticipate that PICs may require additional resources and access to technical expertise for:

- Setting up new, or reviewing existing, food laws and strengthening the legal provisions relevant to fortification and related food control
- Strengthening existing food control structures (including human resources, inspection services and laboratories for product quality assurance)
- Collecting and analysing data for monitoring and evaluation purposes
- Accessing technical manuals and guidelines, including relevant publications of the Codex Alimentarius, so that effective training can be undertaken,
- Facilitating technical discussions on food claims, labelling and packaging, taking into account international food standards
- Collaborating with relevant industry groups, national or regional laboratories, and international networks of specialists in the different technical fields required for food fortification
- Determining need for and levels of fortification, including monitoring
- Assisting in dietary assessment of population groups

---

<sup>36</sup> Omar Dary; WHO Draft fortification manual, p. 14.

- Accessing technical manuals and guidelines on national food composition and on the nutrient requirements of different population groups
- Designing nutrition education programmes for the public so as to strengthen the impact of micronutrient fortification programmes and so promote their sustainability
- Strengthening participation in food fortification programmes, by facilitating linkages to other health programmes (this may include programmes for household food security and nutrition improvement, special programmes for emergencies, gender-sensitive programmes, or programmes directed towards population groups affected by human immunodeficiency virus (HIV)).<sup>37</sup>

Work is already proceeding on many of the matters outlined above. Other work with important connections to the present project is also underway, such as the WHO/FAO's work on food standards in the Pacific region. It is important that the fortification project is harmonised with the WHO/FAO's work, to maximise its chances of success. Given the importance of the problems caused by micronutrient deficiencies in the region, we urge that swift action towards a regional standard be undertaken immediately.

---

<sup>37</sup> [http://www.fao.org/documents/show\\_cdr.asp?url\\_file=/DOCREP/005/y8346m/y8346m11.htm](http://www.fao.org/documents/show_cdr.asp?url_file=/DOCREP/005/y8346m/y8346m11.htm)

## References

Codex Alimentarius, 'General Principles for the Addition of Essential Nutrients to Foods'. CAC/GL 09-1987 (amended 1989, 1991). Accessed online at [http://www.codexalimentarius.net/download/standards/299/CXG\\_009e.pdf](http://www.codexalimentarius.net/download/standards/299/CXG_009e.pdf)

Darnton-Hill I and Naluboa R. 2002. 'Fortification strategies to meet micronutrient needs: successes and failures'. *Proceedings of the Nutrition Society* 61: 231-341

Darnton-Hill I. 1998. 'Overview: rationale and elements of a successful food fortification programme'. *UNU Food Bulletin* 19: 92-100

Darnton-Hill I. Mora J. Weinstein H. Wilbur S. Nalubola P. 1999. 'Iron and Folate fortification in the Americas to prevent and control micronutrient malnutrition: an analysis.' *Nutrition Reviews* 57(1): 25-31

Food Standards Australia New Zealand. 2005. *Fortification Implementation Framework: Addition of Vitamins and Minerals to Food*. Available online at [http://www.foodstandards.gov.au/srcfiles/Fort\\_Imple\\_Frame\\_May05\\_2.pdf](http://www.foodstandards.gov.au/srcfiles/Fort_Imple_Frame_May05_2.pdf)

Gibson Rosalind...?Tommaso how do I cite Roslind Gibson's report?

International Life Sciences Institute. 1997. *Preventing micronutrient malnutrition: a guide to food-based approaches. Why policy makers should give priority to food-based strategies*. Available at: [http://www.fao.org/documents/show\\_cdr.asp?url\\_file=/DOCREP/x0245e/x0245e01.htm](http://www.fao.org/documents/show_cdr.asp?url_file=/DOCREP/x0245e/x0245e01.htm)

Knowles J. 2005. Review of the nutrition situation in fourteen Pacific Island Countries: constraints and opportunities.

Nathan R. 1999. *Regulation of Fortified foods to Address Micronutrient Malnutrition: Legislation, Regulations and Enforcement* USAID

Nathan R. *Food Fortification Regulation In Light of the WTO Agreements* accessed 18/1/06 on <http://www.gphls.com/micronutrient.htm>

New Zealand Ministry for Economic Development. 1996. *The Generic Policy Development Process*. Available online at [http://www.med.govt.nz/templates/MultipageDocumentPage\\_9287.aspx](http://www.med.govt.nz/templates/MultipageDocumentPage_9287.aspx)

Underwood B and Smitasiri S. 1999. 'Micronutrient malnutrition: Policies and programmes for control and their implications' in *Annual Review of Nutrition* 19:303-324

USAID Micronutrient Program. 2000. *Manual for Wheat Flour Fortification with Iron: Guidelines for the Development and Implementation, Monitoring and Evaluation of a Program for Wheat Flour Fortification with Iron*. Available online at <http://www.mostproject.org/PDF/1.pdf>

Venkatesh Mannar MG, Sankar R. 2004. Micronutrient fortification of foods – rationale, application and impact. *Indian Journal of Pediatrics* 71:997-1002

WHO Regional Office for the Western Pacific. 2003. *Report on Proceedings of the FAO/SPC/WHO Pacific Islands Food Safety and Quality Consultation*

WHO. 1999. *Report on Proceedings from Workshops on National Plans of Action for Nutrition: Key elements for success, constraints and future plans*. Kuala Lumpur 25-29 October 1999

WHO. 2003. *Report on the Proceedings from the Global strategy on diet, physical activity and health: Western Pacific regional consultation meeting report*. Kuala Lumpur 9-11 June 2003

# Appendices

## ***Appendix 1 – Terms of Reference for the project***

### **Proposal to undertake a study on regulatory requirements for food fortification in the Pacific**

#### **BACKGROUND**

##### Micronutrient malnutrition

Countries in the Western Pacific Region are facing a number of important nutrition-related health issues, which require a comprehensive range of interventions to counter. One problem is a deficiency of key micronutrients in the diets of Pacific populations. This can lead to micronutrient malnutrition – a term used to refer to diseases caused by a dietary deficiency of vitamins or minerals.

Globally, vitamin A deficiency, iron deficiency, anaemia and iodine deficiency disorders are the most common forms of micronutrient malnutrition. While all population groups can be affected, the most severe problems are usually found in developing countries.<sup>38</sup>

A recent analysis of micronutrient deficiencies and opportunities for micronutrient fortification in the Western Pacific Region was undertaken for WHO by Professor Rosalind Gibson. Using available data sources, Professor Gibson identified:

- known prevalence of micronutrient deficiencies in the region
- potential micronutrient inadequacies in the available food supply per capita
- possible vehicles for food fortification for various countries.

In terms of micronutrient deficiencies, some of Professor Gibson's key findings included:

- Calcium and iron deficiencies in Fiji, Kiribati, New Caledonia, Papua New Guinea, Solomon Islands and Vanuatu
- Anaemia is a public health issue in 11 out of 21 Pacific countries, and in some of these countries vitamin A deficiency is also a public health problem.

A more detailed overview of Professor Gibson's findings is attached at Appendix 1.

##### Food fortification as an intervention

---

<sup>38</sup> International Life Sciences Institute. 1997. *Preventing micronutrient malnutrition: a guide to food-based approaches. Why policy makers should give priority to food-based strategies.* Available at: [http://www.fao.org/documents/show\\_cdr.asp?url\\_file=/DOCREP/x0245e/x0245e01.htm](http://www.fao.org/documents/show_cdr.asp?url_file=/DOCREP/x0245e/x0245e01.htm)

Four of the key strategies to target micronutrient deficiencies in populations include: dietary improvement, food fortification, supplementation, and global public health and other disease control measures. In developing countries, food fortification is increasingly recognized as an effective medium to longer term approach to improving the micronutrient status of large populations. Some studies have shown fortification to be one of the most cost-effective methods of reducing micronutrient deficiencies, although effective monitoring regulation and enforcement are key to the success of fortification programmes.<sup>39</sup>

Importantly, any fortification programme requires careful planning to ensure that appropriate food vehicles and fortificants are selected to enhance micronutrient status in the target population. All fortification programmes must address quality assurance and safety concerns. Additionally, it is important to ensure a multi-sectoral approach, which involves input and collaboration from government agencies, industry, NGOs, scientific experts, and consumer groups.

## **PROPOSED RESEARCH**

It is proposed to build on previous work to further explore the option of a sub-regional programme of fortification of wheat flour and other foods for Pacific Island countries and to develop a plan for implementing such a programme. To do this two separate but inter-linked studies are proposed.

The focus of this proposal is on examining the regulatory requirements for food fortification in the Western Pacific region. This would involve reviewing legislation, regulations and other legal instruments (such as trade agreements or conventions) applying in each of the 21 Pacific Island countries to determine whether law exists to enable food fortification initiatives. If it does, opportunities to harmonise legal requirements between countries will be explored. If no such law exists broad options to develop this will need to be canvassed.

The longer term objectives of this component of research would be to:

1. ensure that at least two or three Pacific island countries have adequate legislation, regulations, and/or standards that create an enabling environment for flour fortification and that ensure protection of consumers.
2. create a framework for harmonized standards for flour fortification to the greatest extent possible throughout the sub-region.

This work would occur in parallel with another proposed study which would expand upon Professor Gibson's work and assess food availability and trade factors in the Pacific. In summary, this work would assess food availability and

---

<sup>39</sup> Ibid.

consumption in the Pacific to identify appropriate food(s) vehicles which could be fortified, appropriate fortificants to be added, and appropriate levels of fortification. It would also review facilitating and constraining factors related to food trade in the Pacific. This would include considering issues such as marketing factors, tariffs, quarantine issues, trade volume, etc.

It will be essential that strong links are maintained between the two projects and those working on them.

### Proposed consultant

At this stage it is envisaged that proposed regulatory review work would be undertaken by a consultant from Allen and Clarke Policy and Regulatory Specialists Limited, a New Zealand-based company with extensive expertise in food regulation, legislative analysis, and working on public health projects in the Pacific. The project would be led by Allen & Clarke Director, David Clarke, a legal expert with considerable expert in food legislation.

## **OUTPUT**

The output from this proposed study on the regulatory requirements for food fortification in the Pacific will be a report which presents:

- a review of the current situation regarding the legal framework for food fortification in Pacific Island countries; and
- a proposal for the steps needed to facilitate the execution of a fortification programme for the Pacific.

## **METHOD**

A broad staged methodology is proposed.

- Stage 1 – Information would be sourced (copies of countries' legislation, regulations, standards, and any related trade agreements) and a review of this material would be undertaken out-of-country. A report will be produced at presented to Pacific Island countries at the WHO/UNICEF meeting in Nadi in late March 2006.
- Stage 2 – To finalise the review of each of the 21 counties' legal framework, any additional information would be sourced. This would involve further out-of country follow-up, but might involve undertaking some in-country visits to obtain difficult-to-access information. More importantly, stage 2 would be used to obtain in-country buy-in and

commitment from stakeholders and to consult in more detail about any proposals in the stage 1 report and conclusions from the Nadi conference.

At this time it is considered that these in-country visits would concentrate on food-producing countries to ensure that products exported to other Pacific countries can be fortified.

- Implementation – Follow-up technical and legal assistance to Pacific Island countries would be provided to help prepare legislation required to implement a food fortification programme and to address any gaps or inconsistencies identified during stage 1. A separate funding proposal would be developed for this phase of work – although a high level discussion is included in the proposal below.

## **Stage 1: Initial review of legislation**

### Step 1: Identifying source material and key informants

The first stage of the project will involve:

- Identifying the precise information that will be sought from Pacific Island countries and other stakeholders. This is likely to include copies of food legislation and regulations, any food standards, policy documents relating to food standard-setting and food fortification, and explanatory materials. Copies of any regional trade agreements which interface with such domestic legislation would also be sought).
- Identifying key in-country informants and the best mechanism to access the required information. This would include officials in Pacific Island countries, the WHO, the FAO, the Forum Secretariat, SPC, industry, regional trade organizations and food authorities in New Zealand and Australia with Pacific links.
- Agreeing upon the list of foods and food products which are likely to be the subject of fortification. This will facilitate the identification of stakeholders to be consulted and has the advantage of offering the option of focusing the analysis to be undertaken during stage 3 on actual worked examples based on specific foods. [This work would be led under the food availability and trade study]

A questionnaire would be developed for this purpose as well as a list of documents which are sought.

### Step 2: Consultation and sourcing of information from countries

WHO will be responsible for obtaining the source material identified during step 1. This will involve utilising its network of country offices and contacts, and networks with other stakeholders. The consultant selected would also with consult with New Zealand and Australian Food Regulators who have Pacific Island links and might have access to their legislation (e.g. the New Zealand Food Safety Authority or Food Standards Australia New Zealand).

As the time frame for the completion of the project is short, this stage is time critical. If it is not possible to adequately source the required information from all 21 countries in a timely manner (an indicative timeframe is provided below) it will not be possible to complete the subsequent stages and prepare a comprehensive report in time for the March 2006 meeting.

Note: if it is not possible to collect all necessary information according to the timeframe set out below, it may be necessary to use the March 2006 meeting as an opportunity to obtain the required information from meeting participants with a view to drafting and presenting the report at another suitable regional meeting of Pacific Island countries.

**Optional**

**This phase could also involve interviews with key informants and visits to a small number of countries to facilitate the collection of key information. A separate budget item for this alternative is set out below.**

Step 3 – Collation and analysis

This will involve the collation and analysis of the information obtained during step 2.

Analysis will outline the legal framework in each of the 21 Pacific Island countries and determine the legal authority in each country to implement a food fortification programme. Specifically the reviewer will assess:

- a. Whether existing authority prohibits, allows, or mandates flour fortification
- b. Whether there are standards for flour fortification with respect to:
  - i. flour composition
  - ii. fortificant composition
  - iii. fortificant level
  - iv. packaging

- v.labelling
- c. Whether the law/regulations address nutritional or health claims and, if so, what is allowed
- d. What procedures exist for government inspection and certification of imported/exported fortified foods.

The analysis will determine areas of convergence and divergence among Pacific island countries' legal authority with respect to flour fortification requirements. It will also review any regional or sub regional trade agreements which interface with domestic legislation or would impact on the implementation of a food fortification programme

Subject to timing issues, another key part of the analysis will involve the regulatory consultant liaising with nutrition and food technologist consultants (leading the food availability and trade parallel study) and assessing any differing standards relating to food fortification among countries (all PICs or at least those that trade with each other).

Again, depending on how advanced the parallel study is, interim advice on whether different food standards between countries can be harmonized will be developed. Such advice will need to be based on relevant nutritional factors (e.g. food composition, levels of deficiency, etc.). Consultants working on the two studies, with WHO staff, will then develop recommendations for common standards for fortification in areas where appropriate.

#### Step 4 – Preparation of report

A report will be drafted to document the analysis carried out in step 3. This will:

- Summarise the overall context applicable to food fortification in the Pacific, including key trade agreements and other regional agreements and initiatives. that interface with countries' food.
- Identify and summarise the key legal instruments (acts, regulations, and any standards) which impact on food fortification in each Pacific Island country. It will advise whether existing authority prohibits, allows, or mandates flour fortification in each country.
- Identify whether there are standards for flour fortification covering composition, labelling, packaging, and health claims (as outlined under step 3 above).
- Identify any inconsistencies between the approach taken by various countries to food fortification.
- Identify gaps in the legal frameworks associated with food fortification in Pacific Island countries.
- Canvass procedures existing for government inspection and certification of imported/exported fortified foods.

The report will also make recommendations regarding:

- Harmonizing food fortification initiatives in Pacific Island countries (subject to the timing issues discussed above)
- The steps that should be taken to address any gaps in the current legal frameworks for food fortification in Pacific Island countries.
- The steps that should be taken to address any actual or perceived barriers to food fortification provided by regional trade agreements and other instruments.

#### Step 5 – Presentation of findings

The report and findings of the project would be presented to Pacific Island countries at the WHO/UNICEF meeting in Nadi, Fiji in late March 2006.

Depending on the comprehensiveness and timeliness of the information sourced at step 2, this report may have to be an interim report.

#### **Stage 2: Finalization of the regulatory review**

The focus for stage 2 will depend on how comprehensive the out-of-country information sourcing exercise is step 2 of stage 1.

For stage 2, in-country visits are proposed to complete the information gathering exercise and finalise the legislative review of all 21 Pacific Island countries.

A key component of the in-country visits will be to engage with key stakeholders and obtain buy-in and in-principle support for the adoption of a sub-regional food fortification programme. This will involve consultation and dialogue among key stakeholders including PIC governments, flour industries and civil society organizations, and within regional trade organizations, about the importance and availability of flour fortification as a MNM intervention.

Consistent with the WHO draft terms of reference the following broad activities are envisaged:

- WHO would approach regional organizations and governing authorities within the Pacific island countries to discuss the feasibility of creating harmonized standards for flour fortification within the region.
- WHO, with international agency/organization partners, would convene a meeting of regional organization representatives, applicable government agencies, relevant food companies, and civil society organizations, to foster dialogue on the importance and feasibility of flour fortification within

the region, and to attain agreement on harmonized standards and certification procedures to the greatest extent feasible.

### **Stage 3: Implementation assistance**

Note: This is a possible future activity and is not included within this proposal.

WHO and a regulatory consultant would provide assistance to Pacific island countries to strengthen legal authority for food fortification and advise on appropriate inspection and enforcement procedures.

## **Appendix 1: Summary of recent study of micronutrient deficiencies in the WPR**

An analysis of micronutrient deficiencies and of opportunities for micronutrient fortification in countries of the WPR was prepared for WHO by Prof. Rosalind Gibson. This paper identified, based on data available in WHO and on a literature review, the known prevalence of micronutrient deficiencies in the Western Pacific Region (WPR), and potential micronutrient inadequacies in the available food supply per capita, based on FAO Food Balance Sheet data and on the use of the World Food Dietary Assessment Programme to determine a nutrient density profile for each country, compared with a reference nutrient density profile. Some possible vehicles for food fortification were identified for various countries.

Of the Pacific countries, six have data on adequacy of nutrient densities per capita in the food supply, based on FAO Food Balance Sheets, in the analysis conducted by Ros Gibson: Fiji, Kiribati, New Caledonia, Papua New Guinea, Solomon Islands and Vanuatu. In all of these countries calcium and iron were found to be deficient, and in all but New Caledonia other micronutrient deficiencies were also likely to exist. Data available with the WHO Nutrition Programme show that in at least 11 out of 21 Pacific countries (including PNG) anaemia is a problem of moderate public health significance, or greater (based on WHO criteria, when the prevalence of anaemia is > 20%): Fiji, French Polynesia, New Caledonia, Kiribati, Marshall Islands, Federated States of Micronesia, Papua New Guinea, Samoa, Solomon Islands, American Samoa, Vanuatu. In some of these countries vitamin A deficiency is also a public health problem. Based on Ros Gibson's analysis, in at least three of these countries (Fiji, Kiribati and New Caledonia) wheat flour consumption is sufficiently high (above 100 g per capita per day) to make them good candidates for a wheat fortification programme. Five countries (Fiji, Kiribati, Papua New Guinea, Solomon Islands and Vanuatu) have similar levels of consumption of rice (above 100 g per capita per day), which would make them candidates for rice fortification, if this approach is technically and commercially feasible where rice is processed.

The Industry Flour Mills of Fiji are the only producer of wheat flour and one of the main exporters in the Pacific. Data obtained from the Industry Flour Mills shows that 15,000 metric tons (MT) of wheat flour and related products are exported from Fiji to six PICs: in order of importance with regard to the quantity exported, Tonga, Samoa, Vanuatu, Wallis and Futuna, French Polynesia and Kiribati. The Industry Flour Mills estimate an increase in their wheat flour exports by 20-30% in 2004; Tuvalu is expected to also join the countries currently importing wheat flour from Fiji. In at least two thirds of these countries anaemia is considered a problem of moderate public health significance or greater.

Since a universal flour fortification programme is expected to be launched soon in Fiji and exports of wheat flour from Fiji to other Pacific countries are expected to increase considerably in the near future, there appears to be an opportunity for establishing a sub-regional programme of flour fortification that would benefit several PICs. This would be aimed particularly to those PICs where anaemia is considered a problem of moderate or greater public health significance and wheat flour and related products are imported and

consumed in significant amounts. The prevalence of iron deficiency is usually about twice as great as the prevalence of anaemia when nutritional deficiencies are a major factor (as is likely the case in practically all the above mentioned countries). In those PICs where the prevalence of anaemia is at least 20-25%, and wheat flour and products are consumed in significant quantities, we can estimate that a flour fortification programme would be beneficial for about half the population (or more), as it would significantly increase intakes of iron and other micronutrients all of which may contribute to anaemia (folic acid, B2, B6, B12, vitamin A, vitamin C).

Other foods beside wheat flour and products may be good candidates for food fortification.

## ***Appendix 2 – Questionnaire to WHO countries***

### **QUESTIONNAIRE**

#### **URGENT REQUEST FOR ASSISTANCE**

Your assistance is sought to help with the collection of information to help the World Health Organization with two projects.

#### **The first project is about generating health benefits in Pacific Island countries through the fortification of food.**

The project will examine existing regulatory requirements for food fortification in the Western Pacific region. This will involve reviewing legislation, regulations and other legal instruments (such as trade agreements or conventions) applying in each of the 21 Pacific Island countries to determine whether law exists to enable food fortification initiatives.

#### **The second project will look at how Pacific countries can use their domestic legislation to address the health problems caused by obesity.**

The obesity legislation project will identify examples of specific legislative initiatives used to address the obesity issue, as used by various countries around the world, and assess their suitability for Pacific countries. Information is again sought about legislation, as well as about trade agreements and policies for each of the 21 Pacific countries.

**Information is sought by 20 January 2006 and should be sent to:**

Dave Clarke  
Director, **Allen & Clarke Policy and Regulatory Specialists Ltd.**  
P.O. Box 54 180, Mana,  
Wellington,  
New Zealand.

Phone: +64 4 477 6973  
Fax: +64 4 477 4425  
Mobile: +64 27 599 0002  
E-mail: [dclarke@allenandclarke.co.nz](mailto:dclarke@allenandclarke.co.nz)

**The following is the key information being sought from each Pacific Island country, as well as from FORSEC, FAO, SPC and other stakeholders:**

1. Public Health / Food legislation and policy

- Copies of all food laws from each Pacific Island country (this includes Food Acts, Regulations, Standards, any other instruments as well as explanatory materials that might be available about these laws).
- Copies of policy documents and papers setting out each Pacific Island country's current policy **on food fortification** and current policy on **using legislation to address obesity** related health issues.
- Copies of all Public Health Acts and Regulations or other legislation from each Pacific Island country which potentially could be used to put in place legal interventions to address obesity related health problems.
- Copies of Pacific Island country's NCD plans or other policies describing plans to address the issue of obesity.

2. Legislation relating to the trade in, and taxation of, products

- Copies of all legislation dealing with the trade (import and export) in food – e.g. Customs legislation.
- Copies of all legislation dealing with the imposition of tariffs, duties, excise taxes, levies, sales taxes (VAT, GST etc) or any other taxes, on all imported and domestically-manufactured products. Note: We are interested in obtaining broad legislation here, not just legislation related to taxes etc. on food, but on goods generally.
- Copies of each country's policies on imposing tariffs, duties, excise taxes, levies, sales taxes (VAT, GST etc) or any other taxes on food.

3. Trade agreements and policies

- Copies of each Pacific country's trade agreements relating to food (and specifically relevant to the country's future potential to fortify foods with micronutrients, or using domestic law to fight obesity).
- Information about each Pacific Island Country's trade policies relevant to food (and specifically relevant to food fortification or using domestic law to address the obesity issue).

- Information about plans each Pacific Island country may have about entering into trade agreements (as well as a summary of any such agreement) which will impact on food (and specifically relevant to food fortification or using domestic law to address the obesity issue).
- Copies of any regional trade agreements, initiatives and other documents relating to the sale, import and export of food (and specifically relevant to food fortification or using domestic law to address the obesity issue).

#### 4. Contact details also sought

- The name of **key contact persons**, and their **contact details** (phone, fax, email), for each country or regional stakeholder (e.g. FORSEC, SPC, FAO) who have responsibility for:
  - The regulation of food
  - NCD control and, specifically, obesity
  - Regulating the import and export of food
  - Setting duties, levies, taxes, or VAT on foods.

It is expected that several Ministries might be involved – perhaps the Ministries of Health, Trade, Finance, Customs. We would be appreciative if we could obtain the contact details for relevant people at each agency.

## ***Appendix Three – Country Profiles<sup>40</sup>***

### **AMERICAN SAMOA**

---

#### **Background**

- Nutritional status

A 1999 survey found that 33% of women in the third trimester of pregnancy, and 48% of children aged 12-23 months were anaemic. A 2001-02 study of school children (two schools) found very low prevalence of anaemia.

There is limited data on other micronutrient deficiencies.

Overweight and obesity are major public health problems in American Samoa. A 1990 survey found that 85% of adult males and 91% of adult females were overweight. Among adults 25-34 years, 74% of men and 59% of women were obese.

A 1995 study found that 31% of preschoolers, 47% of kindergarten children, 15% of junior school and 36% of early high school children were obese.

- Interventions

Public Health Nutrition provides nutrition education at clinics and schools. The 5+ a Day programme runs in American Samoa, as does nutrition education as part of the school curriculum. Schools provide breakfast, lunch and a snack for schoolchildren. A Prevention Block Grant provides fitness classes for schools, government agencies, community organizations and churches.

- Monitoring

Special studies on overweight and obesity have recently been conducted in American Samoa. Routine information is collected on pregnant women, infants and young children.

- Policies

---

<sup>40</sup> The profiles are based on information available and provided by countries at the time the report was drafted, however the project team recognizes that this information may not include the most current statistics and that there remain a number of information gaps.

American Samoa does not have a food and nutrition policy. A National Plan of Action for Nutrition was drafted in 1998, but has not yet been finalised. Several activities included in the Plan have been implemented in the meantime.

There are no national dietary guidelines.

### **Current legislation**

American Samoa is a territory of the USA. Federal laws apply.

### **Trade**

American Samoa is not a signatory to PACER or PICTA. USA has most favoured nation status.

### **Comment**

American Samoa is experiencing very high prevalence of overweight and obesity, a very serious and significant public health issue. While some supporting policies and interventions are in place, data shows that there is the potential for enormous burdens on the health of the population from nutrition-related NCDs.

Nutritional anaemia data indicate that over- and under-nutrition may be present in some individuals, particularly children and pregnant women.

There are no legislative and limited policy platforms to support either a fortification programme (if found to be beneficial), or regulatory approaches to obesity prevention.

# COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

---

## Background

- Nutritional status

Vitamin A deficiency is a significant issue in the Islands. A 1994 study of 200 children showed that 61% had a mild to moderate deficiency.

Nutritional anaemia data is limited: a 1996 study found a prevalence of 10% among school children; however no data is available for other age groups.

Overweight and obesity data is available only for children. A 2003-2004 study found that approximately 50% of primary school children were overweight, or at risk for becoming overweight. In a separate project, 50% of child respondents said they eat fast food three to four times a week.

Mariana Islands ranks third in the world for prevalence of type II diabetes.

- Interventions

The Ministry of Health reports initiatives such as school-based nutrition and physical activity programmes, and an intervention to address vitamin A deficiency; however it is not clear if that includes fortification or supplementation.

The Department of Health has also formed a partnership with the Western Michigan University to deliver “Project Familia” in conjunction with public schools. The project focuses on giving children and their families’ skills like portion control, shopping strategies, increasing physical activity levels, and other ways of supporting healthy living.

- Monitoring

Routine data is collected on child health, including weight and nutritional anaemia. Special studies on adult obesity and anaemia have been carried out.

As of June 2005, a study is being conducted to determine the level of risk that children in the Mariana Islands face with regard to nutrition-related illnesses, including overweight, obesity, and nutritional deficiencies.

- Policies

The National Food and Nutrition Advisory Council were established in 1996, along with the Food and Nutrition Policy and the ten year Plan of Action. The

Council has initiated a number of partnerships. National dietary guidelines were established in 1996.

### **Current legislation**

The Pure Food, Drug and Cosmetic Device Act 1998 requires that food must be labelled, and that imported food must comply with prescribed standards. Standards may be identified as necessary to prevent injury to consumer health. Regulation may be made about ingredients and food composition.

### **Trade**

The Mariana Islands is a commonwealth in political union with the United States. It uses US law except for immigration, taxation, customs and wages. Close trade and political links with the US mean that the US has most preferred status with the Mariana Islands, and would limit the ability of the Mariana Islands to impose any trade restrictions on particular foods.

Most imported food comes from the US.

# COOK ISLANDS

---

## Background

- Nutritional status

A 2002 study indicated that iron deficiency is not a significant issue among Cook Island school children, though no data is available on other age groups. Vitamin A and iodine deficiencies are also not significant in the Cook Islands population.

Overweight and obesity, along with related diabetes, are significant public health issues in the Cook Islands. A 1998 survey found that 50% of adult women and 40.6% of adult men were obese. A 2003 survey of school children found that 12.5% of primary school children and 28.4% of secondary school children were overweight.

- Interventions

Current interventions focus on promoting physical activity, healthy eating and weight loss. There is the potential for improved nutritional knowledge addressing micronutrient deficiencies that do exist.

- Monitoring

National surveys are periodically but not systematically undertaken. National NCD data are available from 1980, 1987 and 1988, and from other smaller, more recent surveys.

- Policies

A National Plan of Action for Nutrition was drafted in 1997 and is due for revision. A National Food and Nutrition Committee, not currently active, could support implementation of the Plan. While National Dietary Guidelines were developed in 1992, the Cook Islands currently use SPC guidelines. The Ministry of Health, in conjunction with the WHO, has developed Guidelines for the Prevention and Management of Hypertension, Diabetes and Obesity [date?]

## Current legislation

The Ministry of Health Act 1991 sets out the responsibility of the Cook Islands Government for the health of the Cook Islands people, and establishes the Cook Islands Health Board.

- Fortification

There is no domestic legislation dealing with fortification.

- Obesity

There is no legislation addressing obesity. The Cook Islands have discussed a 'fat tax' or a 'sin tax' but have not progressed any further.

### **Trade**

The Import Levy Act 1972 places levies on some imported products, including some products which could contain fortified ingredients and/or could contribute to overweight (finished bakery products, for example). The purpose of the Act is to protect local industry rather than a control or facilitation mechanism on imported foods. There are levies on all imported foods, ranging from 0% on corned beef to 10-20% on vegetables. The government has agreed to do away with levies from July 2006.

The Cook Islands is a signatory to PACER and PICTA.

# FEDERATED STATES OF MICRONESIA

---

## Background

- Nutritional status

Nutritional anaemia and vitamin A deficiencies are significant public health issues in Micronesia. A 2001-02 study in two schools found that approximately 12% of children were anaemic. A 1994 study found around 40% of women and children from the Chuukse ethnic group were anaemic, as were 20% of Pohnpeian children.

A 1994 study of vitamin A deficiency found that 51% of Pohnpei children had moderate or severe deficiency.

Malnutrition among children appears to be relatively common. A 1993 survey showed that 48% of children aged 2 to 4 years in Pohnpei were below the 5<sup>th</sup> percentile on standard growth charts.

Obesity and overweight are significant health issues for adult Micronesians. A 1987-88 survey found that among adult women, approximately a third were overweight, and a further third obese. If Micronesia is experiencing similar trends to other PICs, the prevalence of overweight and obesity among adults is likely to have increased significantly since the late 1980s.

The draft National Plan of Action for Nutrition notes that problems of under nutrition and over nutrition can sometime occur within the same family. Nutrition problems seemed to be linked to the kinds of food eaten influenced by personal choice and also cost, availability and access.

- Interventions

Programmes to improve nutrition during pregnancy, child growth, obesity and nutritional anaemia are underway in Micronesia.

A vitamin A supplementation programme began in 1993, taking place twice a year.

- Monitoring

The Government notes that information is routinely collected on birth weight, nutrition during pregnancy, child growth and nutritional anaemia, with special studies focusing on obesity and nutritional anaemia.

There is no regular national nutrition survey programme.

- Policies

A five year National Plan of Action for Nutrition was finalised in late 1999. A subsequent five-year plan covering the period 2006 to 2010 has just been completed.

Key features of the draft plan are plans to introduce price controls on key food items. There is also an expressed desire to continue to use CODEX as the basis for food standard setting.

The National Food and Nutrition Committee was established in 1992 with an intersectoral focus. The activities of this Committee lapsed, however a new Committee has been recently endorsed by the President. National Dietary Guidelines were reviewed in December 1999 and the SPC guidelines are currently used. An FSM food guide has been developed in Chuukese and work has begun on a Kosraen one.

Federated States of Micronesia are investigating the mandatory fortification of key products (rice, flour, noodles and salt) with iron, folate, vitamin A and iodine.

### **Current legislation**

The Federated States of Micronesia do not have a legislative framework that specifically requires, allows or prohibits food fortification. It does not currently operate any domestic legislative controls over high fat, sugar or salt foods.

The National Food Safety Act 1991 prohibits the import, export preparation packing or storage of any food that contains a substance which is not permitted or which contains a greater proportion of a substance than is permitted. (section 4 and 5).

The Act contains regulation making powers which could be used to regulate the addition of nutrients to foods and which allow standards to be set about the composition and labelling of foods. Where a standard for a food has been prescribed by regulations that food and its labelling, packaging and advertising must comply with the relevant regulations (section 7).

The Act prohibits the import or export of dangerous foods defined as foods which are dangerous or injurious to health.

## **Trade**

The Federated States of Micronesia are part of a compact of free association with the United States of America, meaning that they have had an obligation to treat the USA as a 'most favoured nation' in terms of trade. To become part of PACER and PICTA, compact countries must make reasonable efforts to secure a waiver from this requirement. [Current status?]

At present, there appear to be no legislative barriers to import or export of fortified foods. PICTA and PACER may open up opportunities for the Federated States of Micronesia to import fortified foods from sources other than the US, for example Fiji; however given that most US produced flour is fortified, any change in this area would be unlikely to make a significant difference.

## FIJI

---

### Background

- Nutritional status

Surveys in 1993 and 1998 indicated that anaemia is a significant issue among children and pregnant women in Fiji, more particularly among Indian Fijians. Iodine deficiency was common in Fiji prior to fortification of salt in 1998. While Vitamin A deficiency is not considered a problem, data are not available to back up this position.

Overweight and obesity are public health issues in Fiji, particularly among women (50% overweight or obese in 2000). Conversely, underweight is also an issue in Fiji, particularly in rural areas where 33% of children surveyed in 1999 were found to be underweight. Fijian Indians are more likely to be underweight.

- Interventions

As noted above, salt in Fiji has been fortified with iodine since 1998.

Enrichment of wheat flour with iron and vitamin A began in 2004.

Other interventions include nutrition counselling for mothers (ante and post natal); iron supplementation for anaemic mothers, and nutrition education information provided by hospitals, clinics and through the media. Milk supplementation for moderately and severely undernourished pre-schoolers began in 2002.

Projects addressing overweight and obesity are underway in some districts of Suva.

- Monitoring

Information on BMI, nutritional anaemia, iodine deficiency is regularly collected [how is this done?].

The third national nutrition survey took place between 2003-2005. These surveys take place every ten years.

- Policies

Fiji's National Food Policy and Nutrition Policy (1995) has the status of policy guidelines and lacks formal endorsement. National Dietary Guidelines were developed in 1991 and revised in 1999 and the SPC guidelines are also used.

In 1999, the National Food and Nutrition Committee was incorporated into the Ministry of Health as the National Food and Nutrition Centre. The NFNC is responsible for facilitating and coordination all food and nutrition programmes in Fiji via the framework provided by the Fiji Plan of Action on Nutrition (FPAN, 1997). The FPAN has just been reviewed and updated.

A National Noncommunicable Diseases Plan, with an intersectoral implementation mechanism, is currently under development [any update on this?].

Fiji has a national coordinating committee for iodine deficiency disorders.

### **Current legislation**

- Fortification

The Food Act 2003 provides that the Central Health Board may prescribe standards with respect to the fortification of any food if such fortification is based on scientific evidence showing it benefit to health (section 6).

All salt imported into and sold in Fiji must be iodised. [correct?]

The Food Act also provides mechanisms for inspection, sampling and seizure of imported foods, including powers to search. Sections 3 and 4 clearly describe what constitutes unfit or adulterated foods. Part 6 outlines penalties, and officers are given powers to enforce legal requirements via powers to close unsanitary premises; seizure of non-complying goods, etc. Labelling, health claims and packaging are also covered. Avoiding penalties and seizure of goods provide a strong incentive for compliance with regulatory requirements.

The Food Act does provide for flexibility in some areas: the Board can exempt imported foods from the requirements of the Act. It can also prohibit certain foods.

Fiji's Food Act 2003 provides a legislative framework in agreement with the FAO and WHO's recommendations on regulatory requirements for food fortification. The legislation requires or provides for regulations covering quality control, flexibility, enforcement, and regulation-making powers relating specifically to food fortification, currently in practice in Fiji's wheat flour industry. Fiji's advanced legislative framework may provide a model for other PICs.

- Obesity

The Food Act allows for prohibition of certain foods, and may impose controls on advertising and promoting of foods. The Board must, in making regulations, consider restricting the use of substances having no or very little nutritional value as food or ingredients of food (s. 70(3)(a)).

In its 2000 Budget, the Fiji Government banned the import of mutton and lamb flaps: fatty offcuts generally imported from New Zealand.

### **Trade**

The Excise Act 1986 excludes 'essential items', but places excise duties on sugar, chocolate, margarine, instant noodles, sausages, edible oils, and snack foods. The purpose of the Act is to protect local industry rather than to discourage the import of high fat, salt and/or sugar foods.

Fiji is a signatory to PACER and PICTA, therefore import duties will be phased out.

## FRENCH POLYNESIA

---

### Background

- Nutritional status

WHO data indicates that anaemia is a problem of moderate public health significance in French Polynesia. Although there has not been a territorial survey, regularly collected antenatal data found iron deficiency anaemia in 60% of pregnant women, and 43% of children attending health clinics.

A 1989-1990 survey in Tahiti found a goitre prevalence of 1.5% among 10-15 year olds, and 4.4% among adults.

Vitamin A deficiency is not a health issue in French Polynesia.

Obesity and overweight are significant public health issues. A 2002 study of children and young people in urban Tahiti, described the prevalence of obesity increasing with age, from 6% of 3 year olds, to 14% of 15 year olds. 1995 data found that 74% of adults are overweight, and 40% obese.

- Interventions

A programme to promote health lifestyles and obesity prevention was established in 1999, covering five main intervention areas: health education, training, medical practice, health environments and research. The programme addresses health food promotion and regular physical activity, and some actions for management of obese adults and children. The Programme for Action had a five year timeframe until 2004. There is currently no updated Programme in operation [correct?]

Obesity and overweight are the primary nutrition-related health issues in French Polynesia, and it is one of the few countries to have taken an active approach to limiting access to high-energy foods with low nutritional value through the sugar tax. No information is available on the effectiveness of the tax in health terms (it would be difficult to demonstrate a causal link); however the initiative does indicate to the community that the government takes overweight and obesity seriously.

- Monitoring

There is no formal plan for monitoring nutritional status. Information on nutrition during pregnancy and nutritional anaemia (among other things) is collected at

health services level but not centrally collated. A survey of NCDs was carried out in 1995, and periodic special surveys are conducted.

- Policies

In 2002, the Government set up a tax on high sugar products. The tax contributes to a Prevention Fund to support multi-sectoral programmes in the health, education, youth and sport areas.

A five year Programme of Action for Nutrition 1999-2004 has since been incorporated into the 2001-2005 Health Plan, targeting children, pregnant women and overweight people.

### **Current legislation**

[Is there legislation covering sugar tax?]

The French Polynesian legal system is based on the French system. [*Do French food laws apply in French Polynesia?*]

### **Trade**

[What is PICTA and PACER status?]

## GUAM

---

### Background

- Nutritional status

A 1992 project found that, among primary school age children, the average weight for height was 25% more than the ideal, backed up by the findings of a 2001/02 project. A 1999 project looking at adolescents found that 27% were overweight, while the 2001-02 study found that 38% of respondents were overweight and 24% obese. Men were more likely to be overweight or obese.

A study published in 2002 indicated that Guamanian children were unlikely to experience problems with Vitamin A or iron deficiency, but receive less than 50% of the RDA of calcium. Fortified cereals and consumption of local, vitamin A rich foods are considered beneficial for micronutrient intake.

[Any information on adult nutrition or prevalence of anaemia?]

- Interventions

The Government runs a Special Supplemental Nutrition Programme for Women, Infants and Children (WIC), providing food packages, nutrition education, and a collaborative approach with other health programmes to provide a comprehensive service. 5+ a Day programmes run in Guam.

- Monitoring

The Paediatric Nutrition Surveillance System (PedNSS) collects information on demographic factors, information on women's behaviours and nutrition during pregnancy, and information on child health and development. There is an annual Behaviour Risk Factor Survey, focusing on weight, diet and cholesterol awareness. The Chronic Disease Prevention and Control Programme collects data on blood sugar.

- Policies

Guam's current interventions are based on the US Public Health Service's publication *Healthy People 2000*. The Nutrition Section of the Department of Public Health and Social Services is responsible for planning and implementation.

Dietary guidelines were recently established, focusing on the Pacific Food Pyramid, adapted from the US Department of Agriculture's food pyramid. Guam also uses USA and SPC guidelines.

### **Current legislation**

Guam is subject to USA federal laws. Under the Guam Food, Drug and Cosmetic Act [date], the Director may condemn unwholesome or adulterated food, which could potentially include poorly fortified foods, or, less likely, food with very limited nutritional value. The Director may also abate public nuisances, broadly including anything injurious to health, though this is unlikely to have been intended to cover food-related issues.

The Act includes extensive regulations on labelling and additives, and may make regulation prescribing tolerances for additives if necessary, and if not detrimental to public health. This particular power could be useful in terms of regulations to support standards for fortified foods.

US federal regulations concerning additives, dietary use under the US Food, Drug and Cosmetic Act apply in Guam.

### **Trade**

[Member of PICTA PACER?]

# KIRIBATI

---

## Background

- Nutritional status

A 2001-02 survey indicated that nutritional anaemia is a problem among school children. No data is available for older age groups.

Vitamin A deficiency is present; however prevalence is low. Since 1994, Vitamin A capsules have been distributed three times a year to children aged between six months and six years.

Obesity and overweight data collected in 1981 indicated that females, particularly those living in urban areas, tended to be overweight (median BMI of 28.3). Trends reported in other PICs would suggest that overweight and obesity may be an increasing issue in Kiribati.

- Interventions

The National Nutrition Centre undertakes programmes focused on education in the areas of nutrition in pregnancy, obesity, nutritional anaemia and vitamin A deficiency.

NGOs such as Foundation for the People of the South Pacific have contributed to nutrition education in the community. Nutrition education is provided to school children.

- Monitoring

Kiribati has no standardised system or programme for nutrition monitoring. Vitamin A deficiency cases are recorded on monthly statistics forms.

- Policies

A Nutrition Policy was developed in 1992 and reviewed in 1999. The National Policy and Plan of Action (1997-2001) was approved by Cabinet in 1998. The Kiribati National Food and Nutrition Committee, established in 1982, is charged with reviewing the National Nutrition Policy, and implementing, monitoring and evaluating the Plan of Action.

## **Current legislation**

The Pure Food Ordinance, passed in 1977, controls the sale of adulterated food, and controls the addition of substances subject to restriction under any other laws or regulations, which could include some fortifying agents. Misleading labelling is specifically prohibited.

The Consumer Protection Act 2001 requires that goods must comply with prescribed standards, and provides regulation-making powers with respect to standards.

Nothing in Kiribati's current legislation requires, allows or prohibits food fortification, nor places controls on high fat, salt or sugar foods.

## **Trade**

Kiribati has ratified PICTA and PACER, which will affect the Customs Act 1993, which currently allows imposition of import or export duties.

## MARSHALL ISLANDS

---

### Background

- Nutritional status

A National Nutrition Survey in 1991 found that anaemia was common, particularly among young adults. A 2001-02 survey found that around 13% of children from two schools were anaemic. A 1994-95 survey, which found that Vitamin A deficiency was present in 63% of children between one and five years, sparked a supplementation and deworming programme. The impact of this programme has not been measured.

A 1996-97 study showed that approximately 57% of adults aged 18-50 years were overweight or obese, a sharp increase from a 1991 survey. There is an indication that women over 20 years experience particularly high rates of overweight and obesity.

Conversely, undernutrition is a significant public health issue among children in the Marshall Islands, particularly on outer atolls. In 2001, a study of two schools found that 14.8% of children were underweight, and 33% stunted.

- Interventions

The Vitamin A supplementation programme also emphasises use of local foods with high vitamin A content, with a specific aim of finding a sustainable, food-based source of vitamin A.

Previous studies are being used to develop a strategic plan for the prevention of obesity, and promotion of well-being, in collaboration with community groups.

- Monitoring

Clinical and community outreach services regularly collect information on child growth, obesity and overweight, nutritional anaemia in pregnant women and children, and vitamin A deficiency. There is no regular, national survey of health status and nutrition.

- Policies

The National Nutrition and Children's Council (NNCC) was established within the Ministry of Internal Affairs in 1991, and is responsible for developing policies on food, nutrition and child health.

A national policy on agriculture, food and nutrition was approved by Cabinet in 1996, and continues to be revised by the Food and Nutrition Taskforce. National dietary guidelines were developed in 1995, however the SPC's guidelines are the ones currently used.

### **Current legislation**

*No data available*

### **Trade**

The Marshall Islands trade ties with other PICs are complicated by its relationship with the United States. It has ratified PACER [and PICTA?]

# NAURU

---

## Background

- Nutritional status

Nauru has a high population density and limited natural resources to support sustainable food production. Like a number of other PICs, Nauru's primary nutrition-related health problems are linked to very high prevalence of overweight and obesity, and the world's highest prevalence of type II diabetes.

Anaemia is present in Nauru; however there is no recent data available on that, or on vitamin A deficiencies.

- Interventions

*No data available*

- Monitoring

*No data available*

- Policies

*No data available*

## Current legislation

*No data available*

## Trade

Nauru is a signatory to PICTA and PACER. At present, the Customs Tariff Act 1998 places a 25% duty on all non-essential, luxury items (as gazetted); there appear to be no other barriers to importation of either fortified or high fat, salt or sugar foods.

Nauru's main trading partner is Australia.

## NEW CALEDONIA

---

### Background

- Nutritional status

A 1992 study showed a high prevalence of nutritional anaemia among young children, ranging from 70% among children aged 3-12 months, to 79% among those 24-48 months. A recent study indicated probable iodine deficiency in some communities, though no representative data are available. No data on Vitamin A deficiency was available.

As with a number of other PICs, over nutrition is a significant health issue in New Caledonia. A 1992-93 national survey indicated that 43% of European males and 52% of European females in New Caledonia were obese. For the Melanesian population, the figures were 46% for men and 72% for women, and for the Polynesian population, 72% for men and 83% for women. Data from annual health visits in 1999 showed that 17% of school children in the Northern and South Provinces were obese, with girls overrepresented and Polynesians the most affected ethnic group.

- Interventions

*None found*

- Monitoring

Information on child health is collected regularly.

- Policies

A Programme for Action was drafted to run between 1999-2004. This has not been updated. New Caledonia uses the French dietary guidelines.

### Current legislation

*None found.*

### Trade

New Caledonia has endorsed PICTA and PACER and is considering joining (as of early 2005).

# NIUE

---

## Background

- Nutritional status

Nutritional anaemia is present on Niue, although it is reported as being relatively uncommon and generally mild.

Like most other PICs, the main nutrition-related health problems are overweight, obesity, and NCDs such as type II diabetes. 1987 survey found that 15% of adult males and 46% of adult females were obese. If Niue is experiencing trends similar to other PICs, the prevalence of obesity is unlikely to have decreased since the late 1980s.

- Interventions

*None reported.*

- Monitoring

A National Nutrition and Dietary Survey was conducted in 1987. There is no formal, regular programme of national nutritional surveys.

The Maternal and Child Health Division routinely collects information on nutrition during pregnancy, infant feeding and child growth.

- Policies

Niue has no national food and nutrition policy or plan of action. The Niue Food and Nutrition Committee works within the Health Island Project.

Niue uses dietary guidelines from New Zealand and SPC in the absence of locally-developed guidelines.

## Current legislation

*None found*

## Trade

Niue is a signatory to PICTA and PACER.

# PALAU

---

## Background

- Nutritional status

Nutritional anaemia is present in Palau but is not a significant public health issue.

A 1997 survey indicated that vitamin A deficiency was also not a significant issue; however dietary recall surveys indicate that sub-clinical deficiencies might exist.

Obesity and overweight are significant problems in Palau. The Ministry of Health estimates that 50% of adults are overweight, with lower rates in rural areas.

- Interventions

A school health programme has been started at Palau High School, and students are now assessed for obesity.

Palau reports a recent increase in the production and consumption of local foods, particularly among more educated sectors of the community [due to intervention?].

- Monitoring

Special studies have been undertaken on vitamin a deficiency and micronutrient intake among children.

- Policies

Palau has a National Plan for Nutrition which was produced in 1999 and has just been revised. A National Plan of Action for the Prevention and Control of Noncommunicable Diseases has just been finalised.

## Current legislation

*None found*

## Trade

Palau is a member of the compact of free association with the United States, meaning that Palau must accord the US 'most favoured nation' status with regard to trade.

# PAPUA NEW GUINEA

---

## Background

- Nutritional status

Nutritional anaemia is common in Papua New Guinea, and is a significant cause of health problems, particularly among young children. A 1996-97 survey found that, in two low lying coastal provinces, 83% and 91% of children were anaemic. In the Western Highlands, 35% of children studied were anaemic.

Iodine deficiency has previously been a problem, particularly in the Highlands. Vitamin A deficiency is not considered a major problem.

There is limited data on overweight and obesity. Indications are that obesity is more prevalent among men, and in urban or peri-urban settlements. Very few people in the Highlands are at high risk of cardiovascular diseases related to diet.

- Interventions

Since 1995, legislation has required that all salt for human consumption be iodised.

From 2002 onwards, vitamin A capsules are given to all children at six months and around 12 months.

Educational intervention programmes address nutrition in pregnancy, child growth and nutritional anaemia. Provincial nutritionists provide education for the public. New materials were made available for this purpose in 2003.

- Monitoring

There is no systematic monitoring of nutritional status in Papua New Guinea. The Health Information Branch of the Department of Health provides annual reports; however the Department acknowledges that there is a need for national nutritional survey information.

- Policies

A National Nutrition Policy was developed in 1995, followed by the National Food Security Policy in 2000.

National nutrition guidelines are contained in the *Nutrition for Papua New Guinea* manual, concentrating on six key messages for good nutrition. These need updating.

A National Coordinating Committee for Iodine Deficiency is no longer active.

### **Current legislation**

A 1995 amendment to the Pure Food Act requires that all salt, imported or produced domestically, must be iodised.

The main provisions contained in the Pure Food Act relate to food adulteration, administration and power to make regulations regarding food standards, food inspection, specific offences in relation to the purity of food, and legal proceedings for offences against the Act. Regulations mainly regulate the sanitation of food, handlers, premises, utensils and food packaging.

The Pure Food Act also contains requirements for food labeling. These include the trade name or description of the food, net weight, measure or volume of the contents and the name and address of the manufacturer or vendor.

### **Trade**

Papua New Guinea is a PICTA and PACER signatory.

At the present time, PNG has excepted imports with tariffs on potato chips, French fries and other potatoes (35%); sugar beet, cane and other sugars, and wheat of maslin flour and other cereal flours at 25%. Under PICTA these excepted imports will be eliminated by 2016. Removal of tariffs may alter the pricing of some products with potential to be fortified (flours, sugar), and some which are high fat, salt or sugar.

At the present time there appear to be no significant barriers to import of fortified products, or restrictions on high fat, sugar or salt products that are not related to protection of domestic industry.

# SAMOA

---

## Background

- Nutritional status

A 1999 National Nutrition survey showed high rates of nutritional anaemia among some groups in the population: children aged between six months and four years; teenagers, women aged under 49 and pregnant women.

Obesity is a major public health problem in Samoa. A 2002 survey found that overall prevalence of obesity was 53% (48% in males and 67% in females); obesity was more common in urban areas and increases with age.

- Interventions

Nutrition promotion programmes are in place in Samoa, covering diet, cooking methods, education material and training for trainers. Home food gardening is being promoted. Other intervention programmes cover nutritional anaemia, among other issues.

- Monitoring

A national nutrition survey was undertaken in 1999, focusing on malnutrition and breastfeeding for young children, but including assessment of anaemia across the population.

A WHO STEPS risk factor survey was conducted in 2002.

- Policies

Samoa has a national food and nutrition policy, developed in 1996, produced and guided by the National Food and Nutrition Council. The Council adopted a national plan of action for nutrition in 2002, and it is currently being implemented.

The National Dietary Guidelines (1993) are being updated and the SPC guidelines are currently used.

## Current legislation

The Excise Tax Rate 1984 requires a 45% tax on imported sugar and confectionary, while the Value Added Goods and Services Tax 1992-93 zero-rates raw, unprocessed foodstuffs made in Samoa.

Legislation concerning food fortification and/or control of high fat, salt and sugar foods appears to be very limited.

### **Trade**

Samoa is a signatory to PICTA and PACER. At present there appear to be no barriers to trade of obesogenic foods, or to fortified foods.

# SOLOMON ISLANDS

---

## Background

- Nutritional status

Nutritional anaemia is a significant health issue in the Solomon Islands, affecting approximately 30% of adult women (1989 data), and approximately 31% of school-age children (2001-02 data).

A 1991 study of Vitamin A deficiency showed a prevalence of night blindness (an end result of Vitamin A deficiency) that suggests this could be a health problem in the Solomon Islands; however it is not clear what age group the study covered, and the data may not reflect the current situation.

Obesity and overweight were last formally measured in 1989, finding that 33% of women were overweight and 11% obese. Based on current trends these rates are likely to have increased.

- Interventions

The Health Education Division of the Ministry of Health conducts educational activities in conjunction with other relevant government and non-government agencies, and local institutions such as churches. The focus is broad, covering infant feeding, informational workshops and training, and general education campaigns for the public.

- Monitoring

Information is collected routinely on children under five years, with special studies on nutritional status of women and children.

There appears to be no regular, formal nutrition or dietary survey work in the Solomon Islands.

- Policies

The National Food and Nutrition Policy was in place in 1994, with the National Plan of Action finalised in 1995. The Plan is still in draft form; however planned activities are being implemented. The multi-sectoral National Food and Nutrition Committee was established in 1990, however ceased to function in 1995.

National Dietary Guidelines have been drafted and were launched in 2004. These are based on SPC guidelines and work on a pidgin translation is currently underway.

### **Current legislation**

The Pure Food Act 1996 provides for securing the safety and nutritional quality of food. In particular, it includes controls on adulterated food, defined as “addition of material foreign to the food”. This could include fortified foods. The Act provides regulation-making powers on standards, additives and labelling, and exempting foods from the Act, some of which could provide a means of addressing some concerns over high fat, salt and sugar foods.

The Goods Tax Act 1993 imposes taxes on a wide range of goods, including those that could be included in fortification, such as bread, flour, and potentially rice and milk. Sugar, biscuits, brewed soft drinks attract an additional 5%; all other goods attract 12%. There is a large group of exempted products – potentially fortified foods and/or healthier options could be added to make them more attractive and accessible.

The Price Control Act 1982 imposes price controls of bread, biscuits, polished rice, flour, Nestle condensed milk and milk powders; sugar, cooking oils, and canned beef. The Act appears to be aimed at securing access to essential foods; however could potentially be used to make fortified and healthier option foods more attractive to consumers.

### **Trade**

The Solomon Islands is a signatory to PICTA and PACER. Some of the price control and goods tax mechanisms may therefore be phased out over time to meet the requirements of the agreements. As with other PICs, trade agreements would make it difficult to place limits on the import of high fat, salt and sugar foods.

# TOKELAU

---

## Background

- Nutritional status

The main nutritional problems in Tokelau relate to overweight and obesity. In 1991, a survey showed that 70% of women and 69% of men were overweight. Among women between 30 and 40 years, 83% were overweight. It is unlikely that the prevalence of overweight has decreased since the early 1990s.

- Interventions

Programmes are in place to improve nutrition, particularly among children and pregnant women, and to address obesity and nutritional anaemia.

All salt imported for human consumption is iodised.

- Monitoring

Routine hospital clinics collect information on nutrition during pregnancy, nutritional anaemia, iodine and vitamin A deficiency, and obesity.

There appears to be no regular national nutrition survey.

- Policies

Implementation has begun on the National Health Strategic Plan (1999-2003). Nutrition is one of the priority areas. The Health Department leads work on nutritional issues, working in partnership with communities, the WHO, SPC and UNICEF.

## Current legislation

The Tokelau Health Rules 2003 contain food hygiene requirements; however these relate primarily to food prepared ready for sale. There appears to be no legislation requiring, allowing or prohibiting import or manufacture of fortified foods.

The Customs Regulations 1991 require that all imported goods for sale at other than a village store attract a 6% duty.

Tokelau is a signatory to PICTA and PACER.

# TONGA

---

## Background

- Nutritional status

The 1986 National Nutrition survey found that nutritional anaemia was common among women, particularly pregnant and lactating women. Vitamin A and iodine deficiencies are not considered to be significant health issues at this time.

Overweight and obesity are Tonga's primary nutritional issues. A 1999 survey showed that 56% of adults over 15 years were obese. In 1999, 5600 metric tonnes of mutton flaps, canned corned beef, sausage and chicken parts were imported into Tonga, amounting to 56 kilos per person. The public health effects of the resulting high fat diet are evident in the rates of overweight and obesity.

- Interventions

Nutrition-focused interventions in Tonga concentrate on overweight and obesity, but include birth weight, nutrition during pregnancy and infant feeding, child growth and nutritional anaemia. A number of weight loss competitions were held by the Ministry of Health during the 1990s, with encouraging results.

- Monitoring

A noncommunicable disease and nutrition survey was conducted in 1992. There is no regular survey.

- Policies

A National Food and Nutrition Policy and a National Plan of Action were endorsed by Cabinet in 1995. The Plan was reviewed in 1996, and again in 1999. This Plan of Action has been inactive since 2003 when it was overtaken by the NCD Strategy.

The National Food and Nutrition Committee (NFNC) was established in 1982 to oversee the implementation and provide advice on the National Plan of Action. This Committee is inactive but there is a sub-group within the NCD strategy group who focus on nutrition.

**Current legislation**

The Public Health Act 1992 defines and controls adulterated foods; however does not specifically allow, require or prohibit fortification. Regulation-making powers provide a general ability to limit, restrict or exempt foods from requirements, and also to regulate advertising, sale, and packaging, including package size. In addition, the Consumer Protection Act 2000 requires that goods must comply with prescribed standards (regulation-making powers are available). Agricultural Commodities Export Act 2002 allows the Minister to require that agricultural goods be inspected prior to export.

**Trade**

Tonga is a signatory to PICTA and PACER.

Following Fiji's lead, Tonga proposed an outright ban on the import of mutton flaps in 2001. This move has not, as yet, attracted a challenge from trading partners.

# TUVALU

---

## Background

- Nutritional status

A 2001-02 study of anaemia showed that 77% of school-aged children and 23% of women of child bearing age were anaemic. A 1991 study indicated that, at the time, vitamin A deficiency was not a major problem.

Tuvalu, like most other PICs, has high prevalence of overweight and obesity: a 1983 study found that 50% of women were obese and 25% overweight. Prevalence was lower among men. Incidence of NCDs like diabetes are considered a significant health issue in Tuvalu.

- Interventions

*None noted*

- Monitoring

There appears to be no regular nutritional survey in Tuvalu. Some special projects (i.e. the Pacific-wide anaemia study) provide some information. Data on infant nutrition and growth are recorded.

- Policies

Tuvalu has a National Plan of Action Nutrition, developed in 1996 and part of the National Food and Nutrition Policy. Both are due for review. There is no information on the scope of implementation of these documents.

National Dietary Guidelines have been developed based on SPC guidelines and are in wide use in public education.

## Current legislation

*Not available*

## Trade

Tuvalu is a signatory to PICTA and PACER.

The Price Control Act 1990 controls the prices of the following commodities potentially related to fortification: rice, flour, cabin biscuits, milk powder,

condensed and evaporated milk. Butter, sugar, edible oils and corned canned beef or mutton are also subject to price control. Price controls may need to be adjusted or removed for Tuvalu to meet its obligations under PICTA.

# VANUATU

---

## Background

- Nutritional status

Nutritional anaemia is a problem in Vanuatu among people of all ages but particularly affecting pregnant and lactating women and school-age children. Anaemia appears to be more common in rural areas.

Vitamin A deficiency is not a major health issue.

Overweight and obesity are significant public health issues. A 1998 survey found that 52% of adult women and 46% of adult men were overweight or obese. Urban-dwellers are over-represented, and the prevalence increases with age.

- Interventions

Training educators, interagency and intersectoral programmes are the most common approach. These tend to focus on healthy eating and lifestyle choices, food safety and security, and promotion of local produce.

There is no overall coordination of activities under a single programme.

- Monitoring

A national food surveillance programme was implemented in 1993. A second national nutrition survey was conducted in 1996 (first one?) and an NCD survey in 1998.

A national health information system records information from health facilities, serving as the primary national monitoring tool; however overweight and obesity information is collected from risk groups only.

- Policies

The National Food and Nutrition Policy, launched in 1986, and including national dietary guidelines was reviewed in 2000. An updated version is in the final draft stage. A NCD plan, encompassing nutrition, was finalised in 2004 and runs until 2009.

Vanuatu's National Food and Nutrition Committee was formed in 1984 but no longer functions.

## **Current legislation**

The Food Control Act 1993 covers food safety issues such as sampling, seizure and destruction, and regulation making powers with respect to labelling and standards.

Part 6 establishes the Vanuatu National Health and Food Safety Fund to support programmes to prevent and reduce malnutrition in Vanuatu, with a focus on those most at risk; provide necessary infrastructure for carrying out nutritional and food safety programmes; preventing nutritional disorders and food-borne diseases; and to improve nutritional status, and food safety conditions in Vanuatu.

The Meat Supply Act 1977 provides controls of domestically-produced meat, primarily concerning meat quality; for example third grade (high fat) meat can only be sold for canning. Second and third grade meats cannot be exported.

The Sale of Medicines (Control) Act 1988 allows any person to sell medicines in schedule 1, including iron and iodine for supplementation, and folic acid in low concentrations. This Act could have some implications for sale of fortified goods, particularly if they contained substances classed as medicines, in concentrations over those specified for general sale.

The Price Control Act 1975 provides for controlling the prices of goods and services, and can be used to freeze or fix prices, or determine a set profit margin. We could find no information on which, if any prices, are fixed; however this legislation could, if used, have some influence on food choices.

## **Trade**

The Import Goods (Control) Act 1984 authorises the Minister to control and prohibit the importation of certain goods into Vanuatu. Some products relevant to fortification (milled or semi-milled rice and wheat flour) require an import licence. There is no information on the use of this Act with regard to high fat, salt or sugar foods. The purpose of the Act is to stimulate and protect local industry, rather than as a food quality or safety measure.

Vanuatu is a signatory to both PICTA and PACER.

## WALLIS AND FUTUNA

---

### Background

- Nutritional status

Nutritional anaemia is very common among children: 75% have low serum iron. No information is available on other micronutrient deficiencies.

While data are limited, it appears that overweight and obesity are common, increasing with age, and more prevalent among women. Anecdotal evidence indicates that Wallisian families are buying imported foods and adding them to traditional diets. Large portions of high energy foods are a particular issue.

- Interventions

Attention is currently focused on the campaign against diabetes, delivered via nutritional education.

- Monitoring

There are no formal monitoring mechanisms. Some basic data is collected on child health and nutrition.

- Policies

There is no national food and nutrition policy or plan or action. Wallis and Futuna does not have a nutrition committee, and has no national dietary guidelines.

### Current legislation

*Legislation was not available.*

### Trade

No relevant information was available. Wallis and Futuna is not currently a signatory to PICTA or PACER.