Food Consumption Trends in the Pacific:
With implications for health and economy

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[Lecture to visiting JICA Fellows from the Pacific. Oct. 2011]

Overview of this lecture

Why good food consumption patterns are good for MoH objectives in health

HIES data normally used to construct CPI and do poverty analysis (my normal work), but HIES data can also assist health planning and delivery of health services.

HIES data on food consumption patterns: carbohydrates, meat, vegetables, sugary items, junk food (diabetes): examples from Fiji, Vanuatu and Tuvalu; and the future trends indicated.

Forces and factors leading to these changes in food consumption and production

Macro-economic implications for food self-sufficiency, good nutrition, and economy.

Policies to counter the trends: what future directions for public health officials here.

Food consumption patterns are critical for good nutrition and health

With significant impact on

general good health (and life expectancies)

infant mortalities

child mortalities

students' well-being and learning abilities

working people's productivities

life style diseases and

adult mortality

Broad history of food consumption in PICs

All PICs originally had subsistence economies: produced and consumed all their foods; some specialisation; some barter exchange; no such thing as “unemployment”.

With colonialism: large tracts of land taken over for export agriculture to produce exports, not food: sugar, palm oil, copra, coconut oil etc; money economy.

With money economy, population began to eat imported food as well

For economies with tourism: greater tendency to eat imported foods.

With globalization, fundamental changes are taking place in food consumption;

All PICs talk about importance of agriculture, food security etc.

But what do the facts say, where we are really going with respect to food consumption?

HIES food data analysis:

Few PICs have real genuine national surveys of food intakes. Many studies just focus on a village or two, or a community or two.

The HIES are genuine random national samples with much data on food expenditure.

For Fiji, food consumption has to be disaggregated by ethnicity because of very significant cultural differences in food consumption patterns: only Melanesian Fijians data is given here, for comparisons with other PICs.

All PICs must disaggregate analysis by rural:urban: very significant differences.

Because children normally eat less than adults, we Consumption per Adult Equivalent where children between the ages of 0 to 14 are equated to half an adult.

To differentiate by income groups, we use quintiles: population 20% groups ranked by Income per Adult Equivalent ie income per capita.

Some nutritional facts

There is a view that traditional PIC foods are much healthier than imported foods.

May be true for some products, and for some nutrients, but not for all.

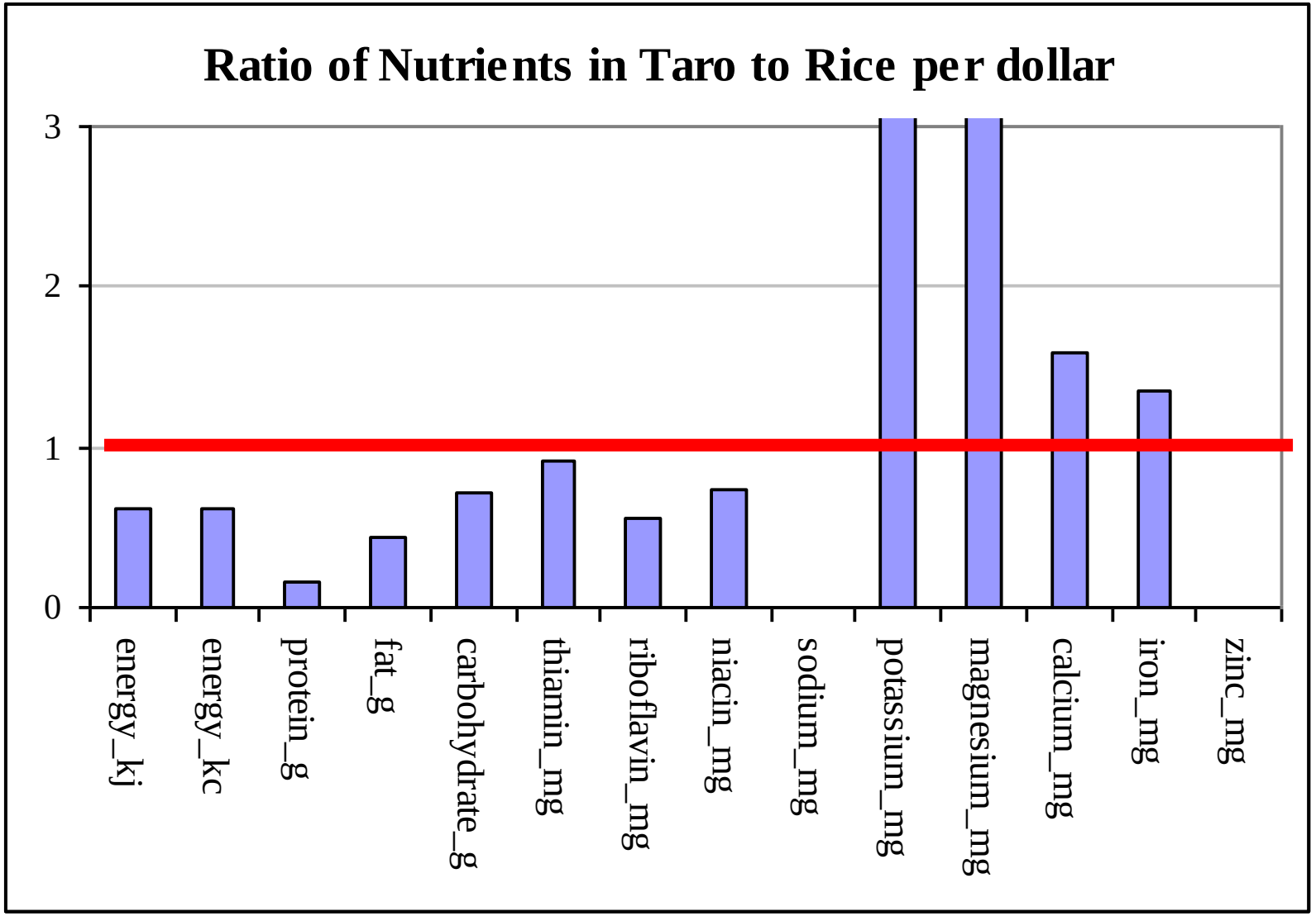
I give some comparisons of nutrients from local foods and imported foods, obtained per dollar spent or per 100 gms. (with food nutrient coefficients derived from Pacific Food Tables).

Some surprises for me.

You health experts will know more about this area.

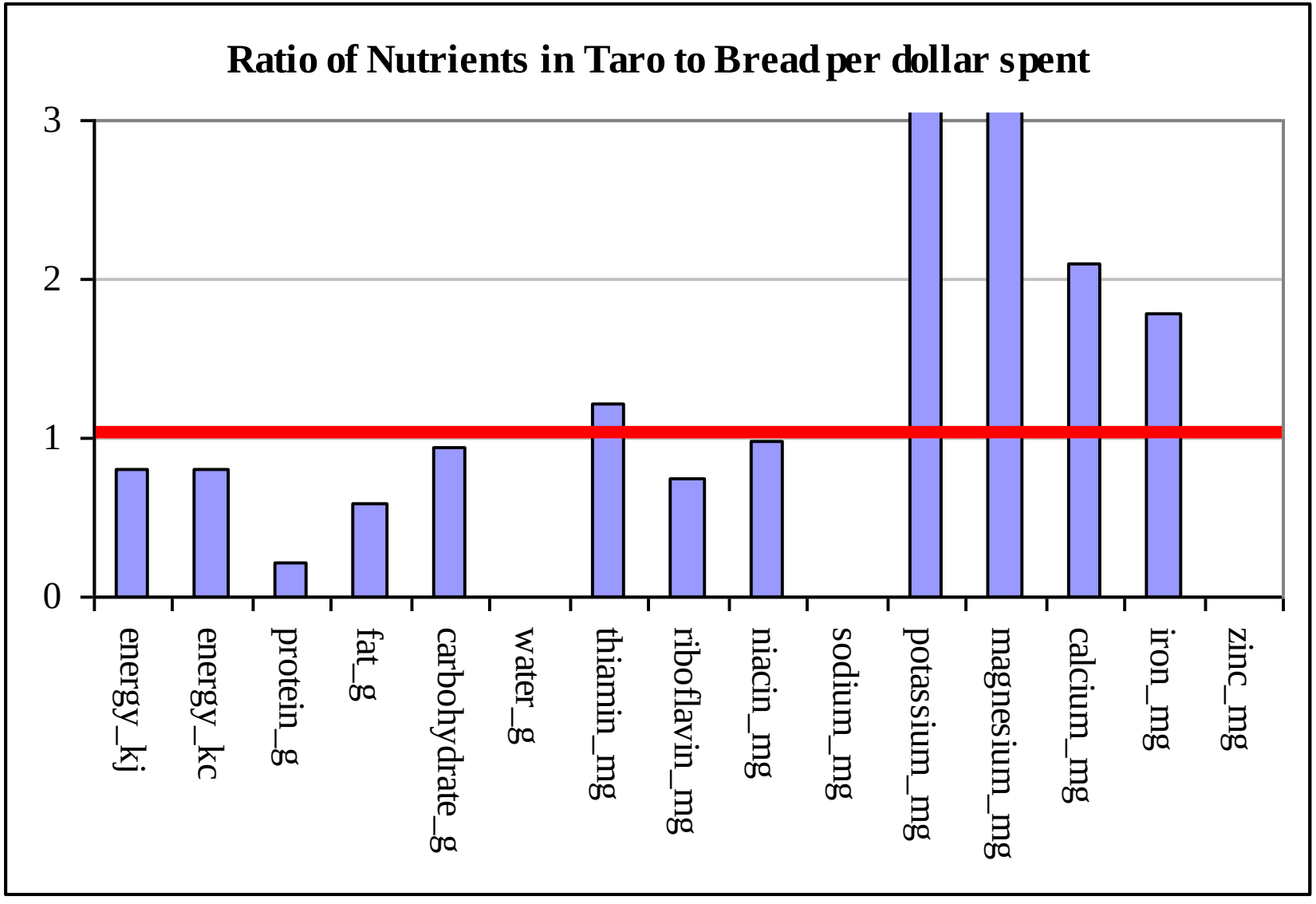
Ratio of Nutrients in Taro and Rice per dollar
(Columns rising above the red line (=1) means local food is better)

Taro/rice



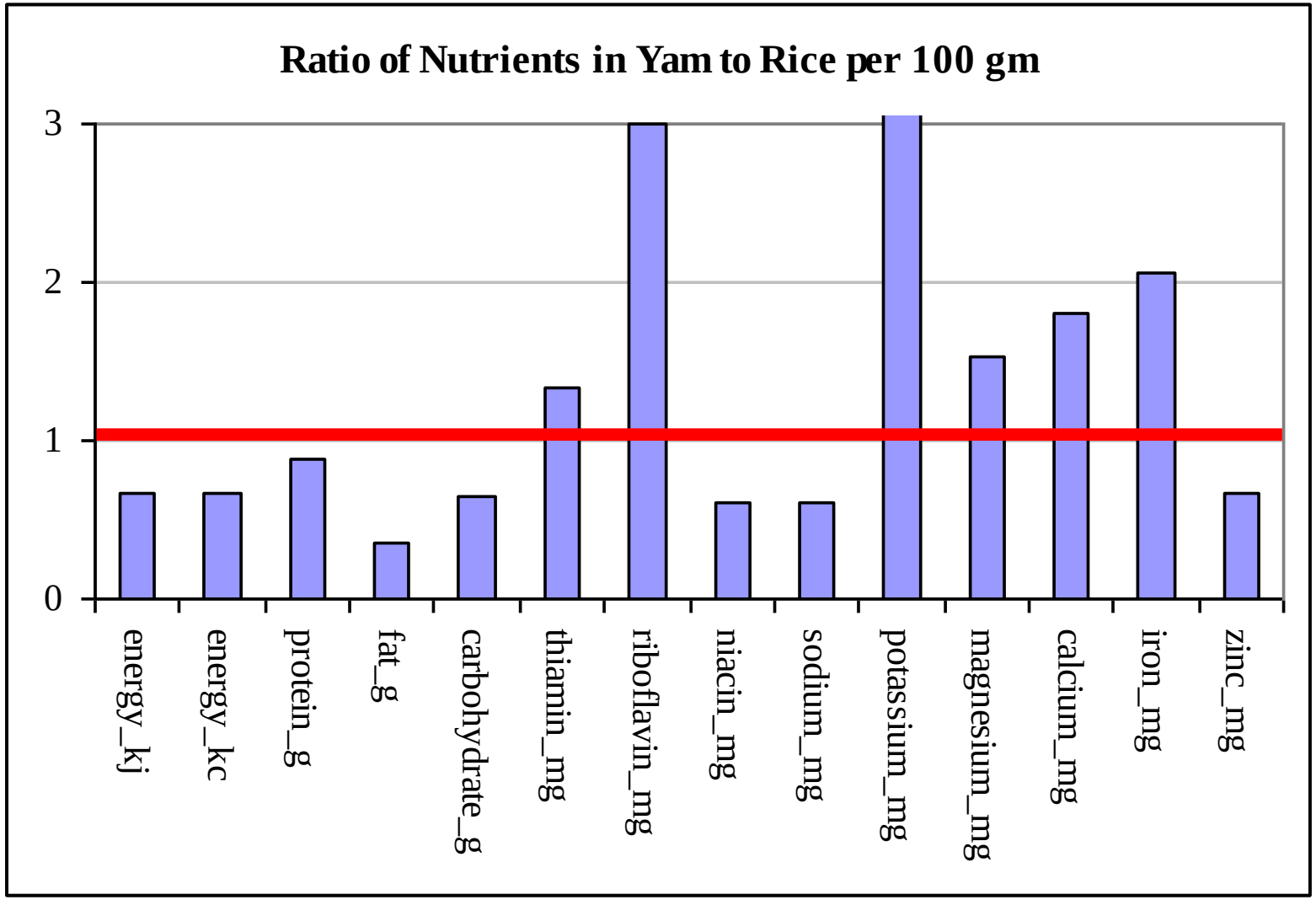
Ratio of Nutrients in Taro and Bread per dollar
(Columns rising above the red line (=1) means local food is better)

Taro/Bread



Ratio of Nutrients in Yam to Rice per dollar
(Columns rising above the red line (=1) means local food is better)

Yam has 27 times the potassium that rice has



Ratio of Nutrients in Reef Fish to Chicken per dollar
(Columns rising above the red line (=1) means local food is better)

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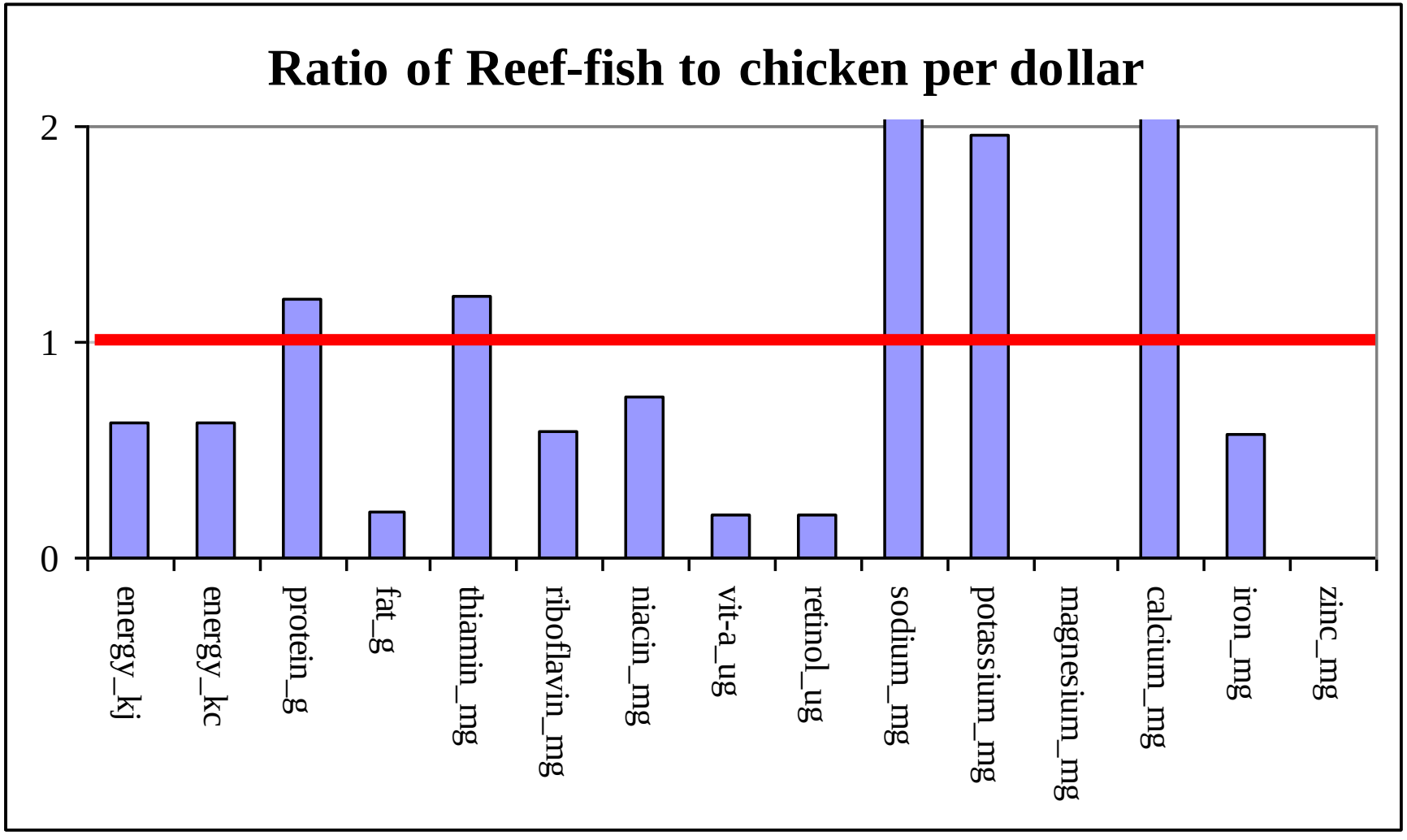
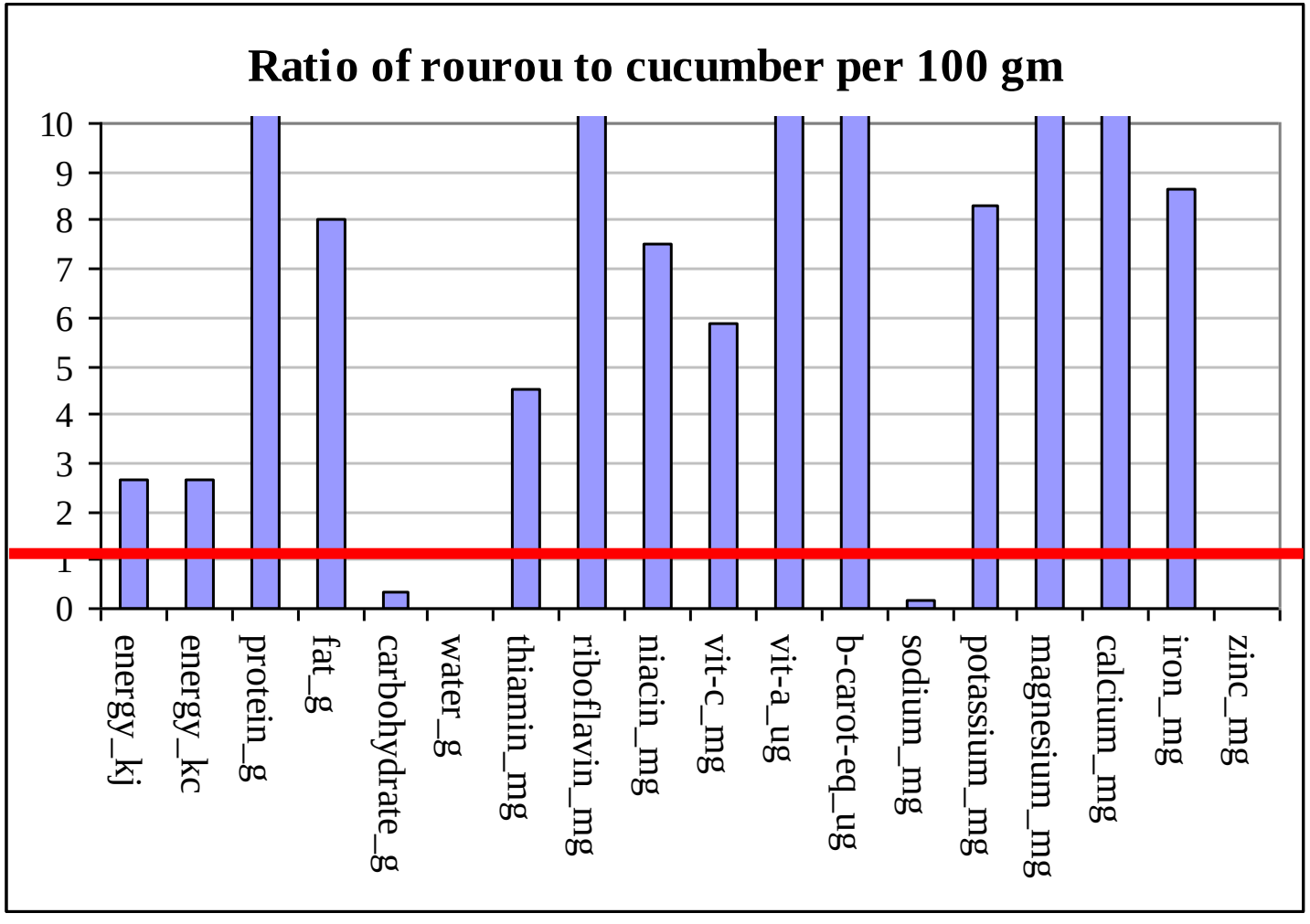


Ratio of Nutrients in Rourou (taro leaves) to Cucumber
(Columns rising above the red line (=1) means local food is better)

No comparison whatsoever.

Rourou far superior

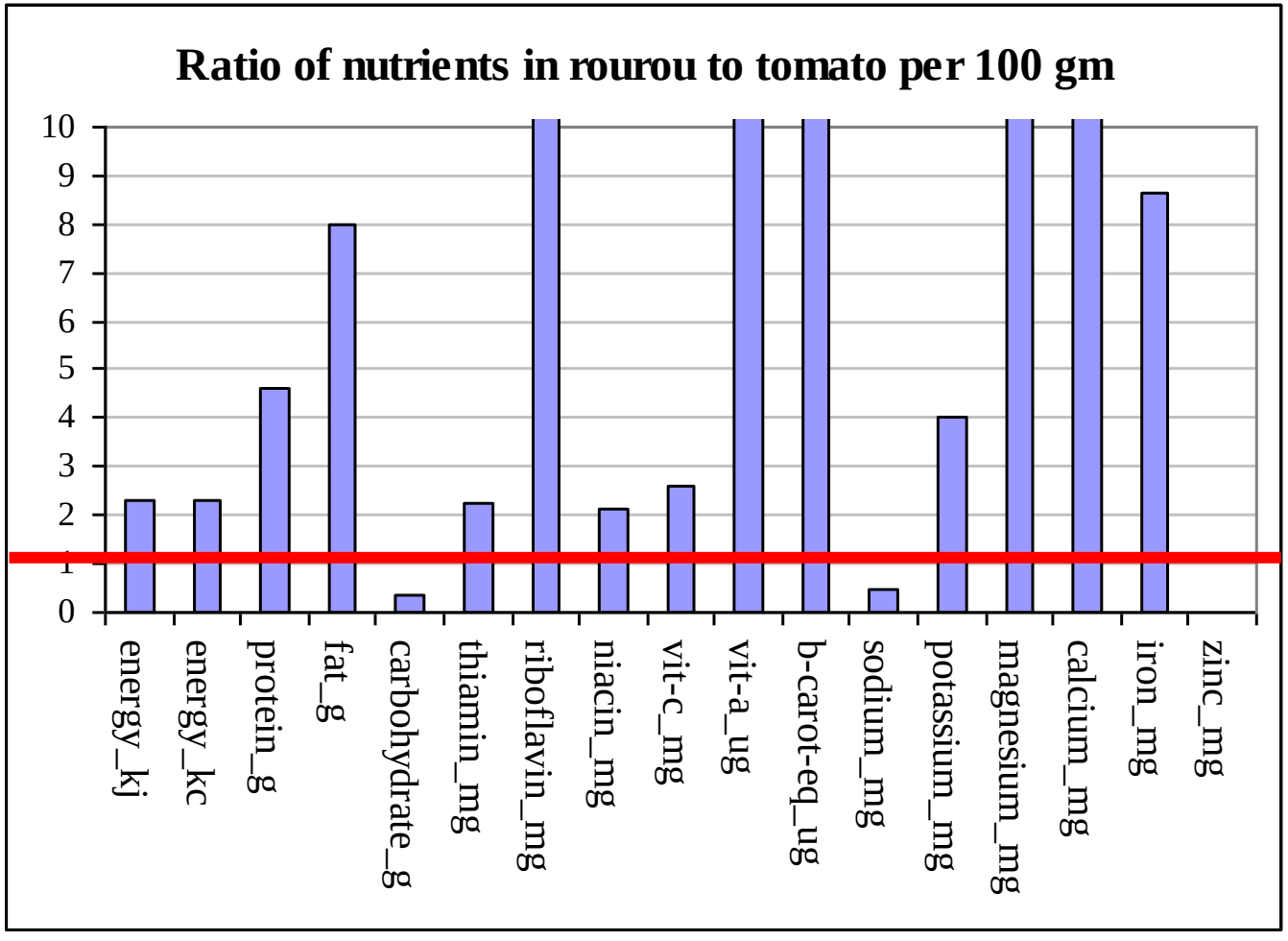


Ratio of Nutrients in Rourou (taro leaves) to Tomato
(Columns rising above the red line (=1) means local food is better)

No comparison whatsoever.

Rourou miles better.

Similarly tubua (churaiya) kerala etc



Ratio of Nutrients in Bananas to Apple

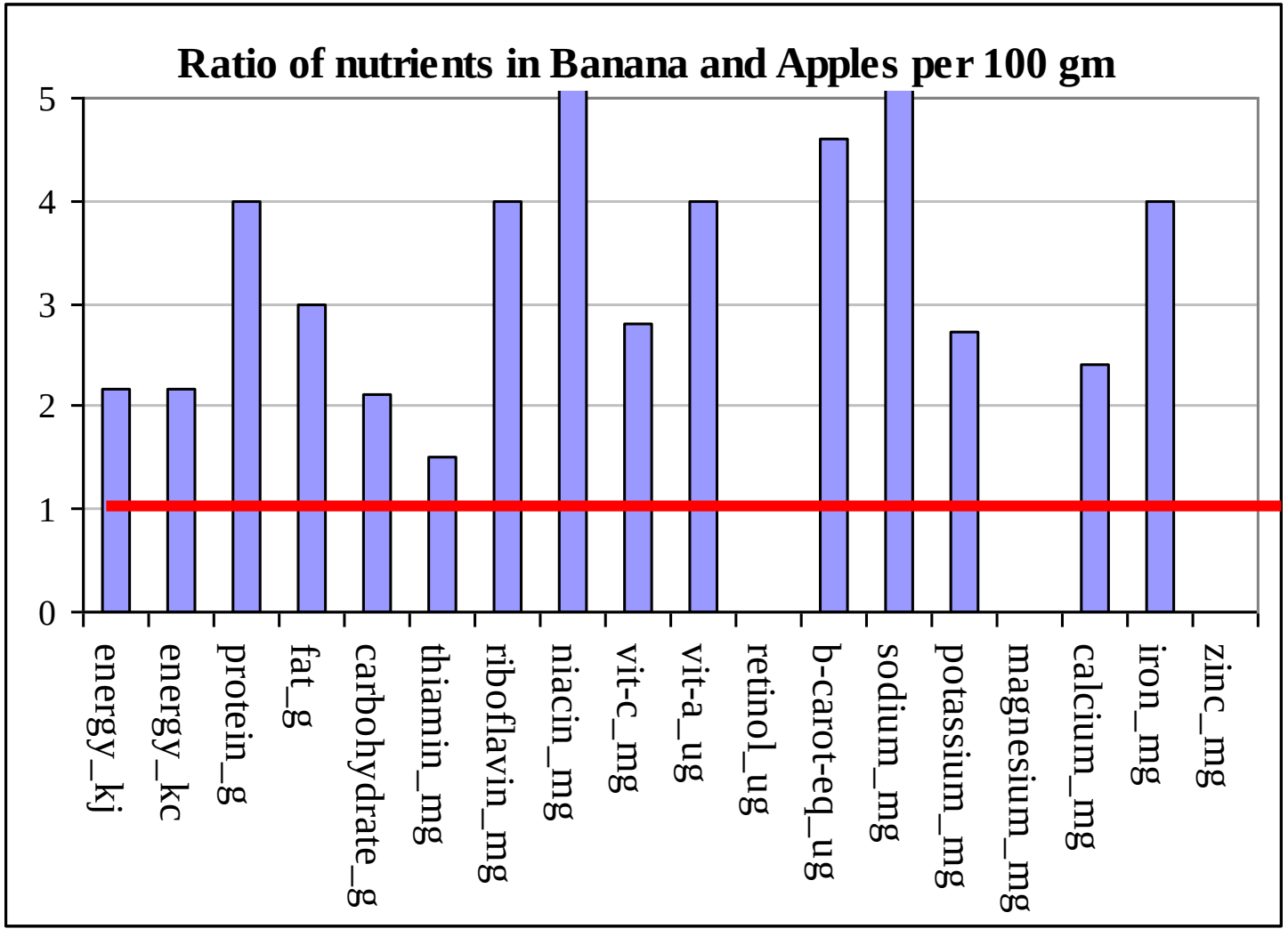
(Columns rising above the red line (=1) means local food is better)

No comparison whatsoever.

Bananas miles better.

Similarly pawpaw, mango and pineapple.

Generally, yellow fruits are more nutritious.



In general, Food as % of Total Income decreases with income

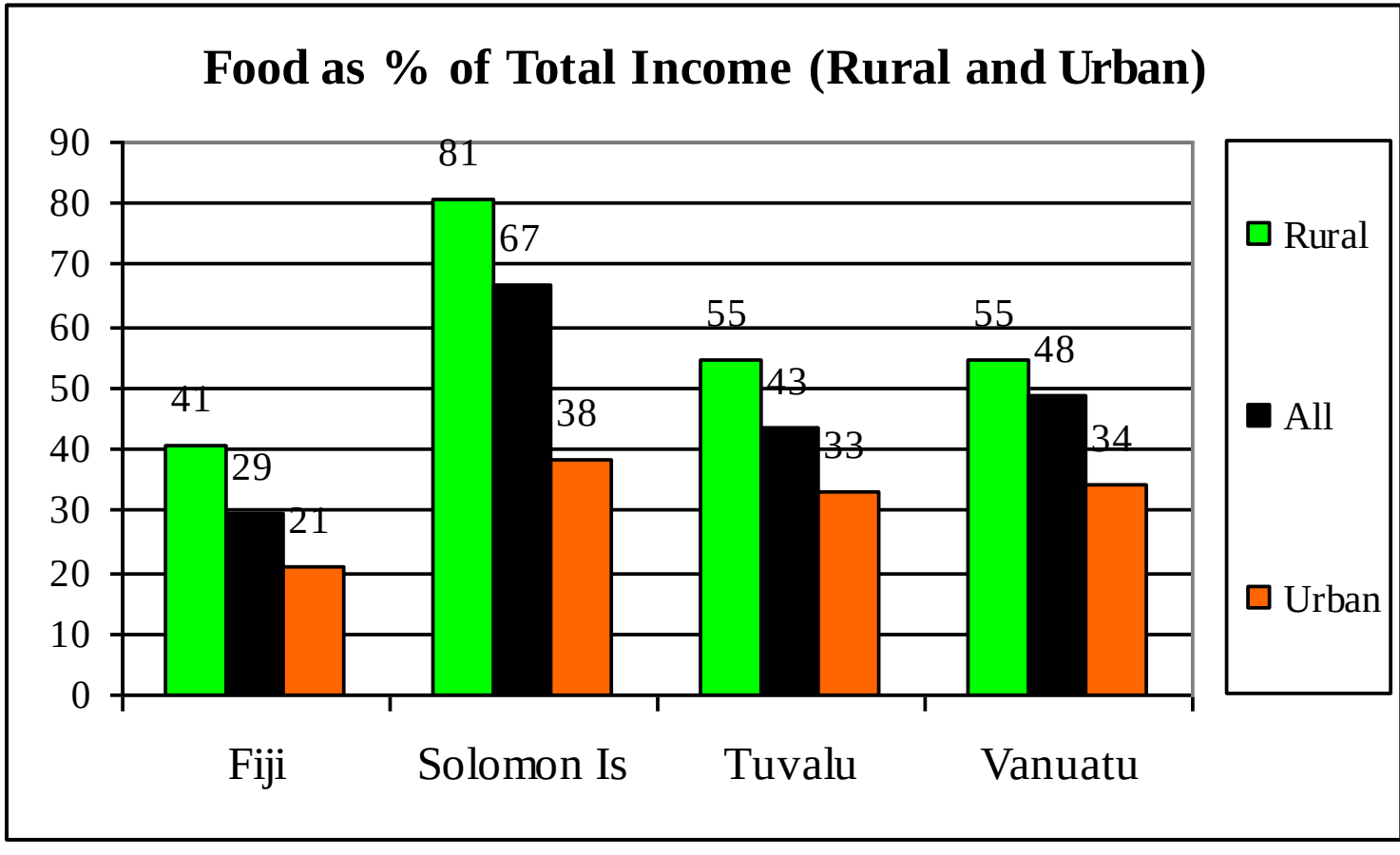
The higher the income, the lower the proportion spent on food: interpret one country.

Applies across countries.

High income PICs will probably be the way the low income PICs will go.

Applies within countries.

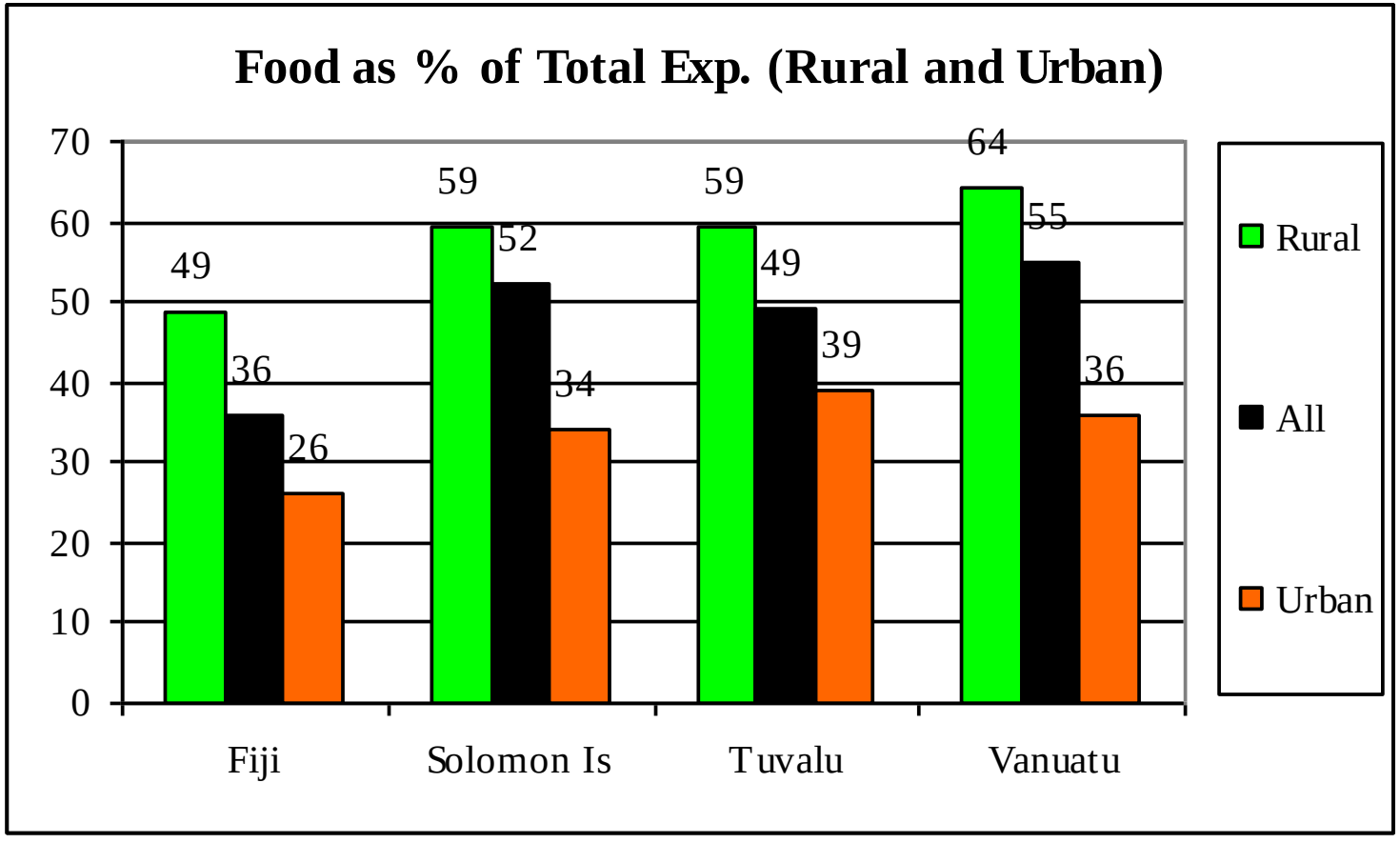
Urban areas represent the way the rural areas will go in future, within each PIC:



Food as % of Total Expenditure also decreases with income

Fiji's proportions extremely low especially for urban Fiji.

General rule: as living standards improve, households spend lower proportion of expenditure on food.



Home production/consumption as Perc. of Total Food Expenditure

i.e. household food self-sufficiency: decreases with rising income

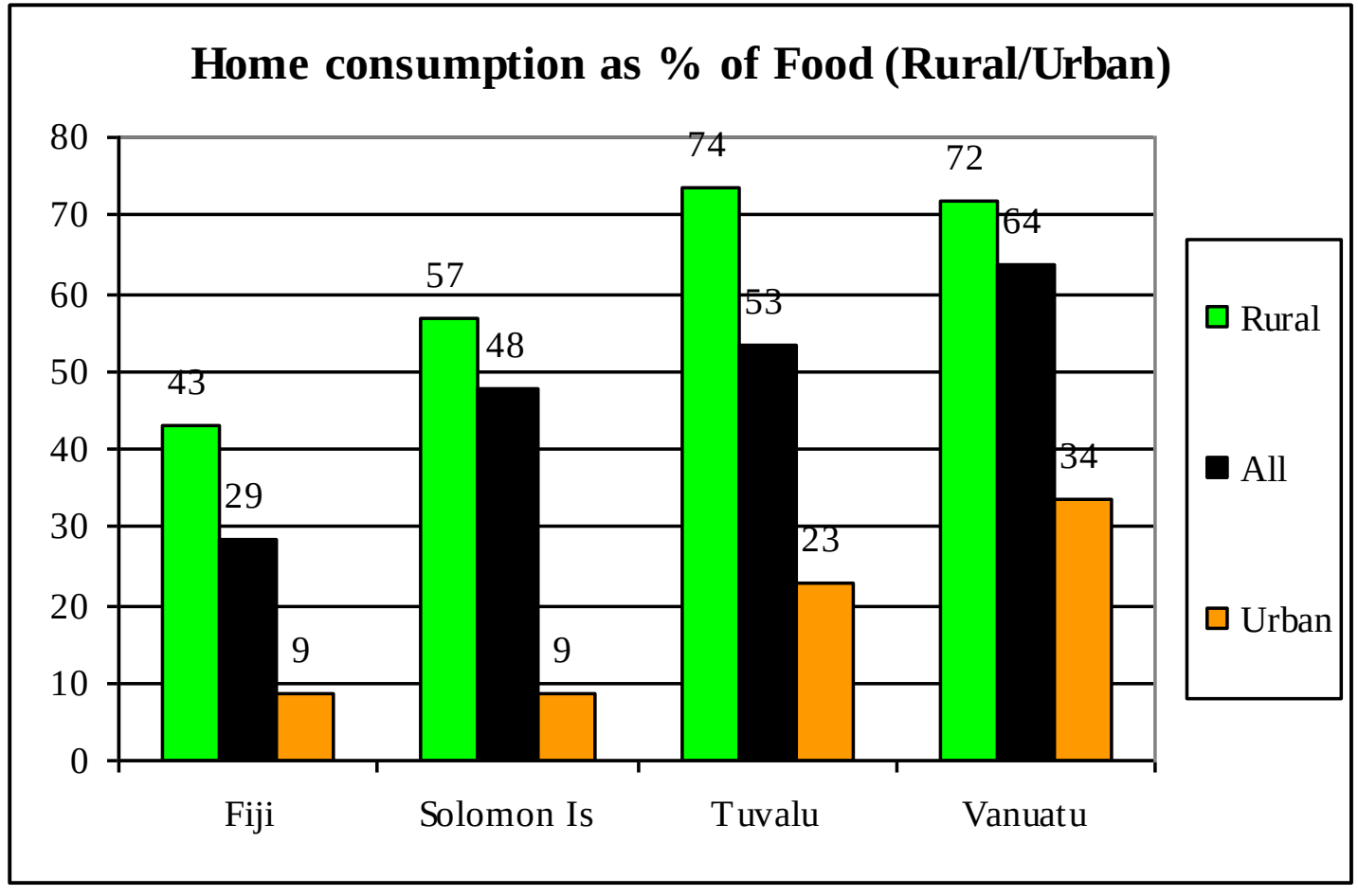
High values for rural Tuvalu and Vanautu

Very low already for urban Fiji and urban Solomon Is.

Can see clear trends across countries.

Big difference between rural and urban households

All PICs are rapidly urbanizing: i.e. more and more of food will be bought.



Fiji carbohydrate consumption: Cassava consumption pAE pa: explain

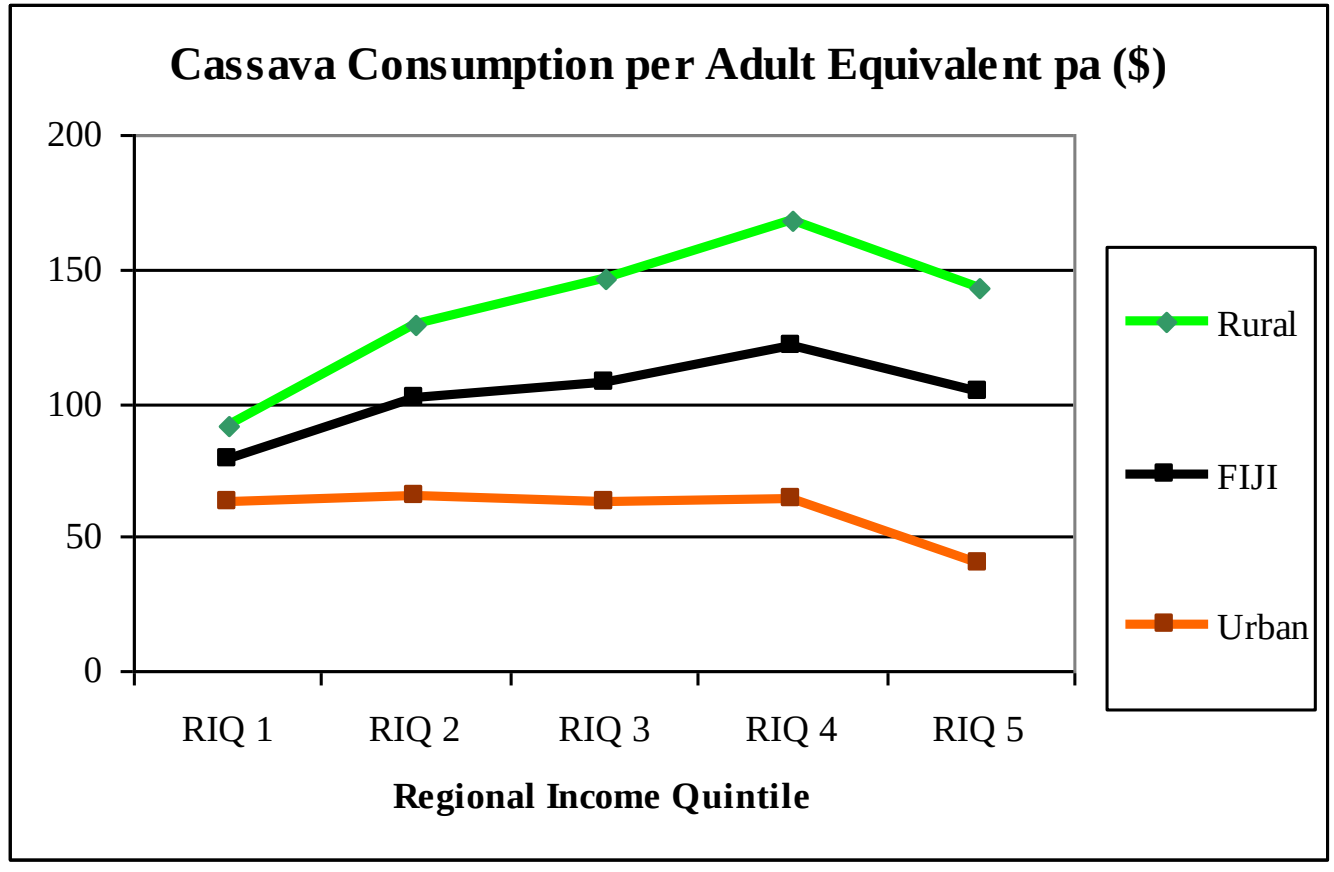
RIQ 1 is the bottom 20% of Rural Fijians and Urban Fijians. RIQ 5 is the top 20%.

Note the large gaps between rural and urban Fijians: Urban Fijians are already consuming much less cassava than rural Fijians

Note the dip for RIQ 5 - both rural and urban Fijians for the top 20% of their populations.

Suggesting that as incomes increase cassava consumption decreases.
In economics: cassava prob. falls into the "inferior" goods category.

Not "normal" (some increase) or "superior" (> proportional increase).



Fiji: Dalo (nutritionally better than cassava): any good news?

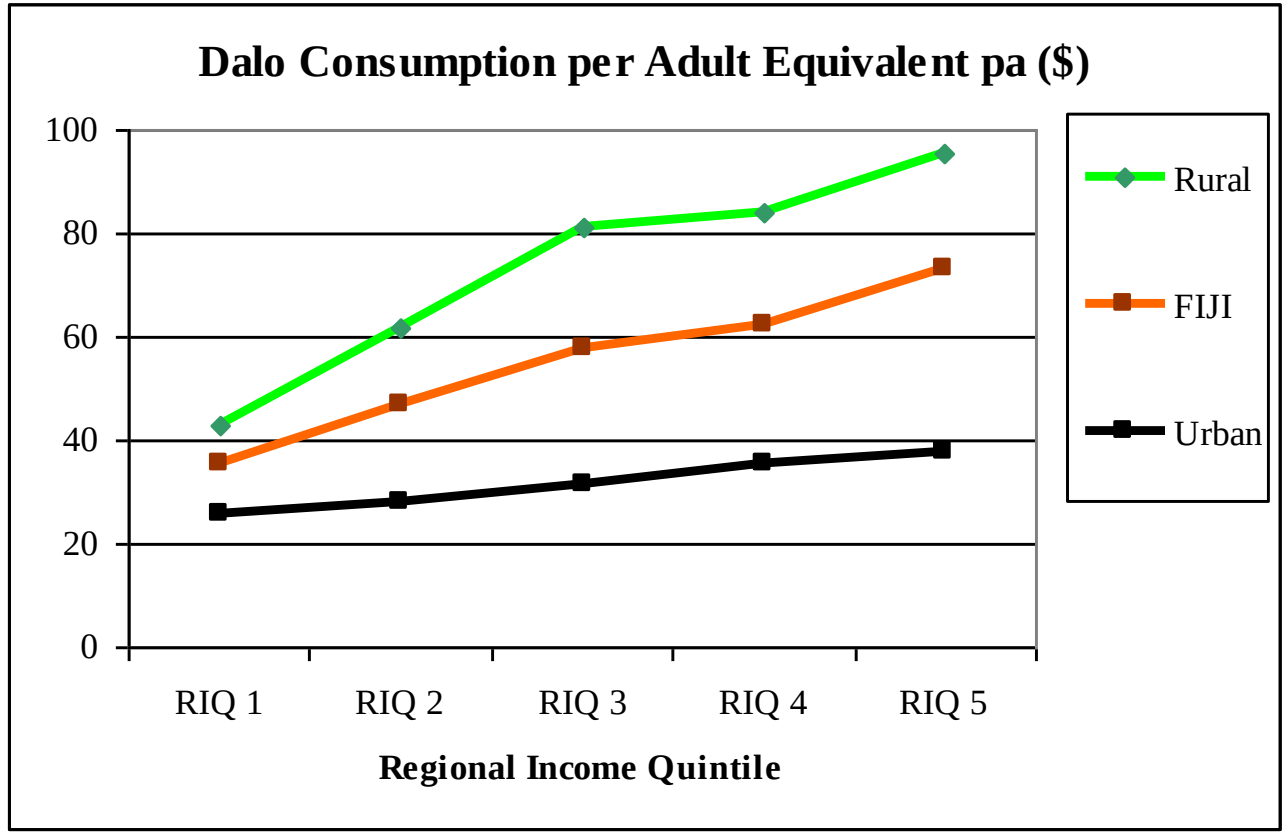
Generally increasing (but not very rapidly at the upper incomes): "normal" good.

Major gap between rural and urban Fijians

Much lower $ values than cassava: cassava easier to grow; and cheaper; more filling per dollar spent.

We will go a bit faster with the slides.

You can look at the details later in your own time.



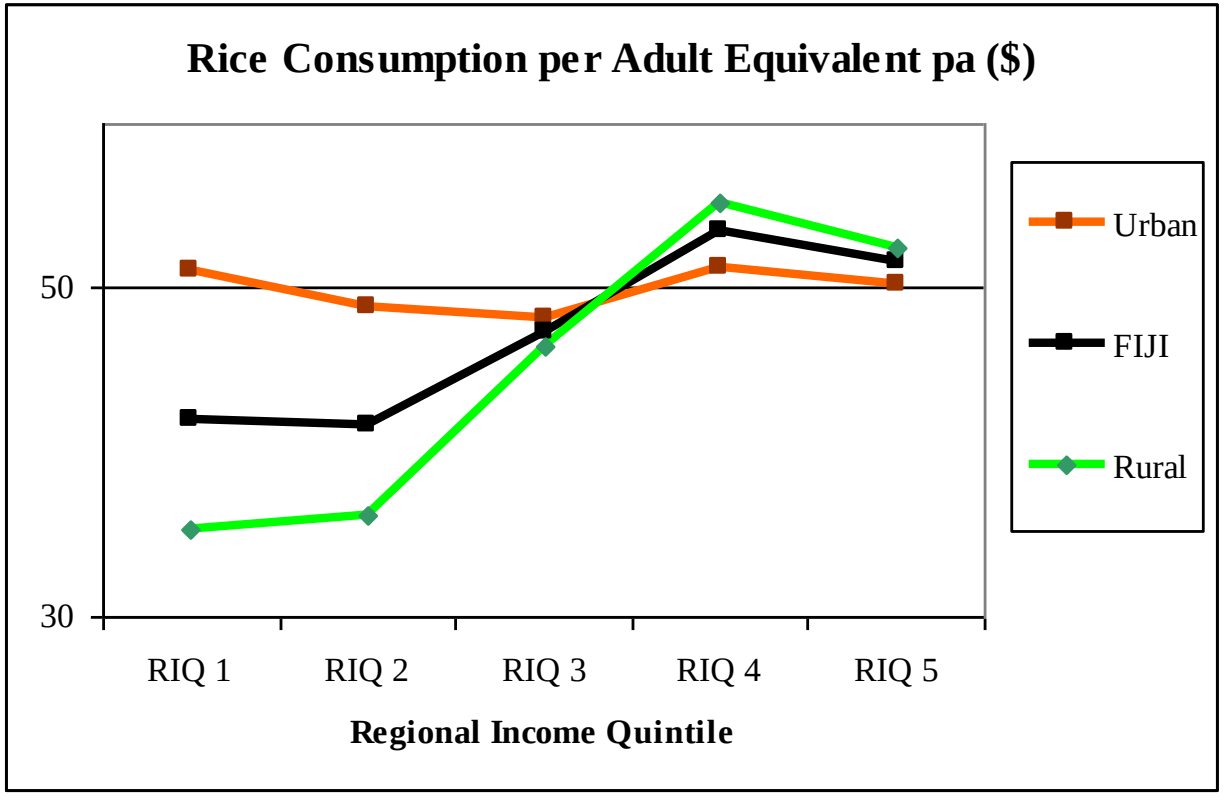
Fiji: Consumption of rice

Urban amounts- same right across all income groups.

Note large increase for rural upper quintiles- even higher than urban Fijians

Note: rice imported: pressure on foreign exchange

Nutritionally not very rich.



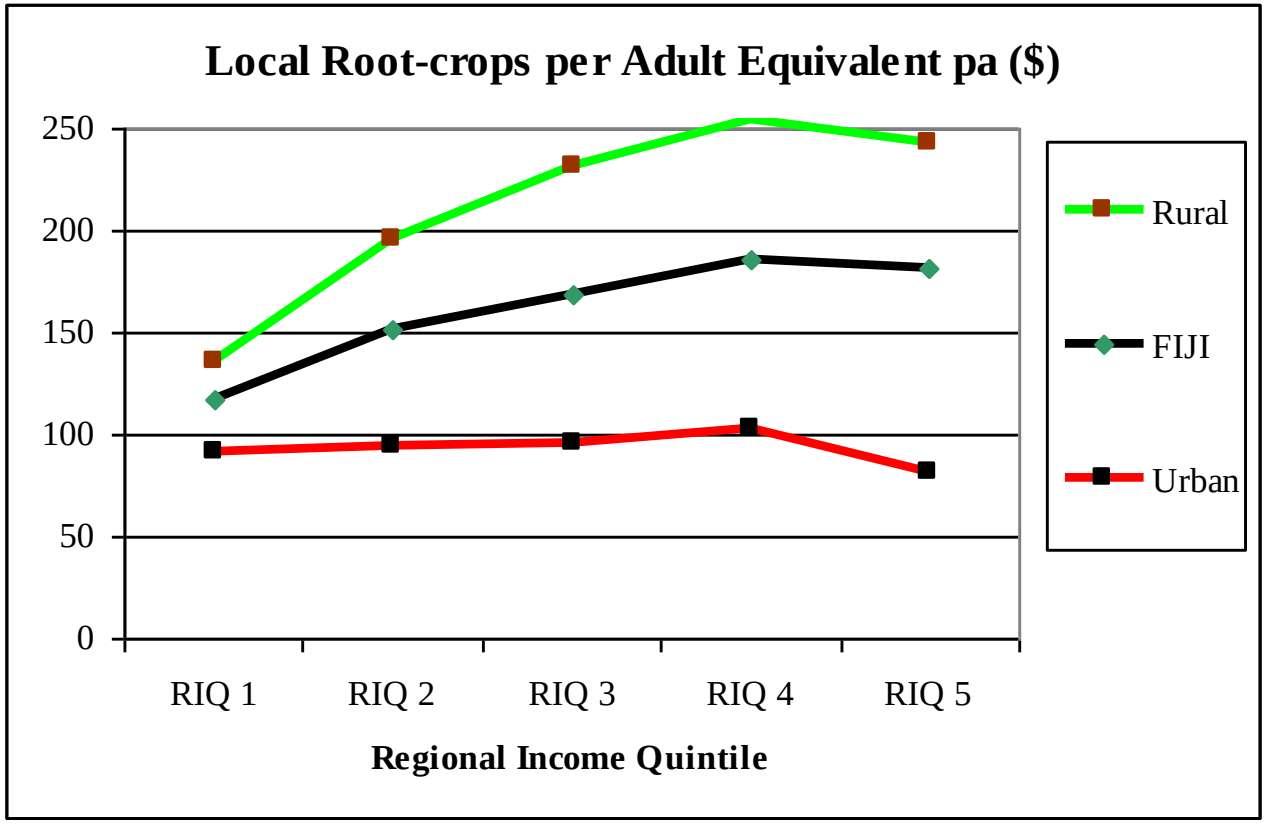
Fiji: all local root-crops (cassava, dalo, kumala, yams etc) per AE pa ($)

Low values: and flat for urban Fijians

Decline for top 20% in both rural and urban Fijians.

Can predict what the future holds for both rural and urban Fijians as their incomes increase.

Almost certainly, local root crop consumption will not increase in proportion and may even decrease.

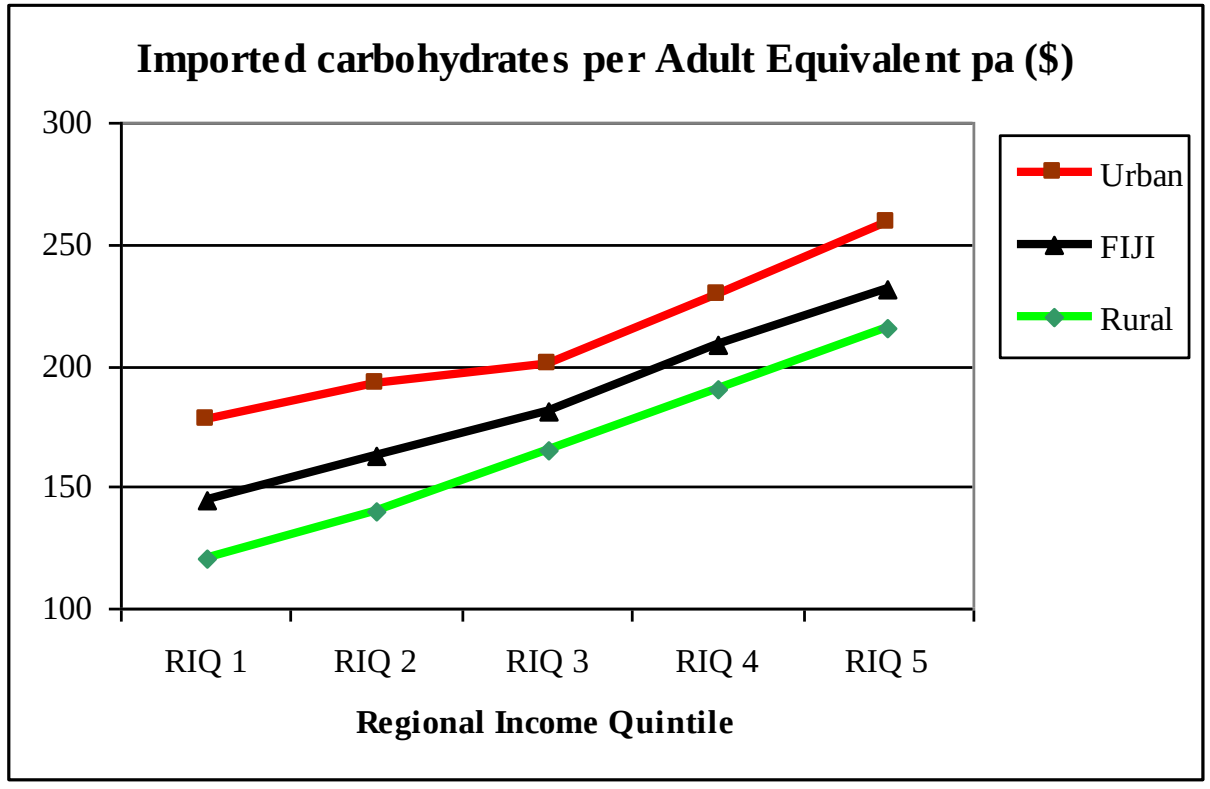


Imported carbohydrates: rice, flour, noodles, bread etc $ pAE pa

Generally upwards trend, with steeper increase at upper quintiles.

Rapid rise of upper income Rural and Urban Fijians

Noodle consumption is going through the roof: in the battle between two competing giants: Maggi noodles and Chow noodles
the real losers are the local root crops.



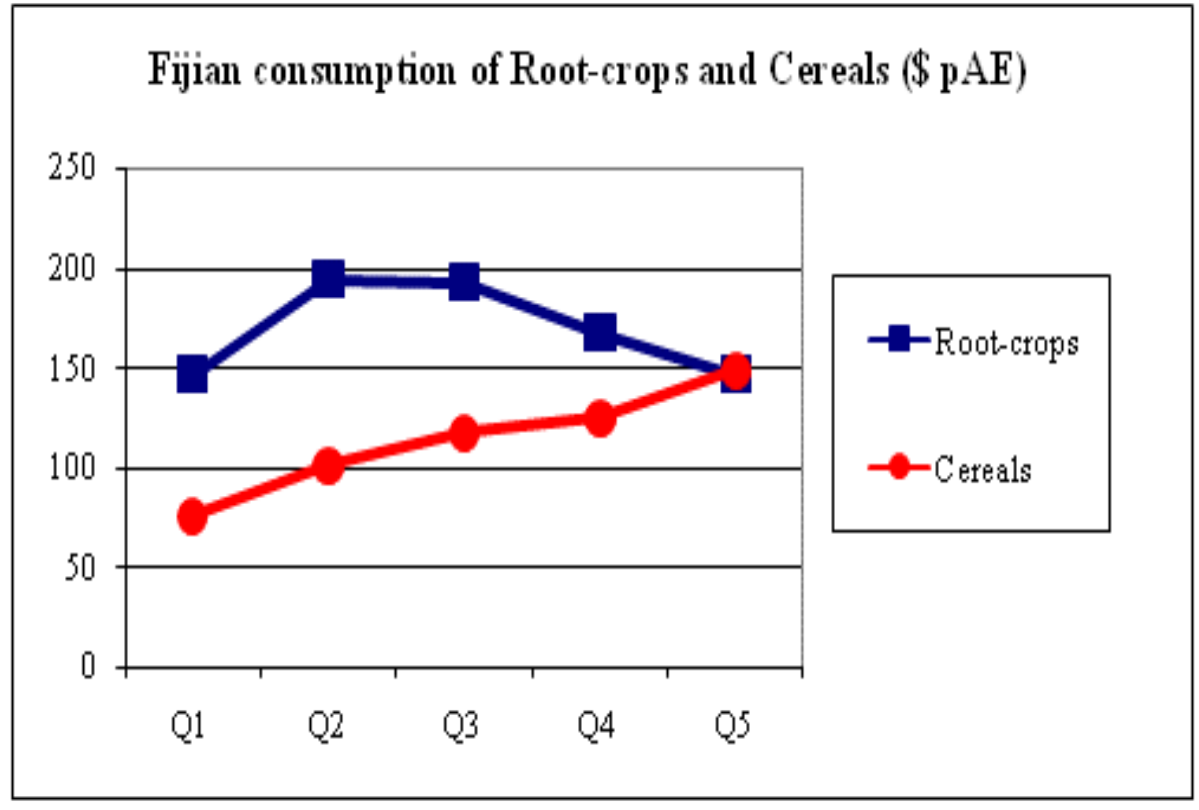
Comparing Fijian consumption of Local Root Crops with Imported Cereals

Total root-crop consumption declines from the second quintile onwards, while imported carbohydrates increase.

By the highest quintile, Fijians are spending as much on imported cereals as on local root crops

Quite clear that as incomes of Fijians rise, their consumer preferences shifts towards imported carbohydrates.

What strategy can be devised to tackle this trend?



Share of Local Root crops in All Carbohydrates (as incomes rise)

The percentage declines straight after the second quintile.
ie as Fiji incomes rise, there will be increasing consumption of imported carbohydrates.

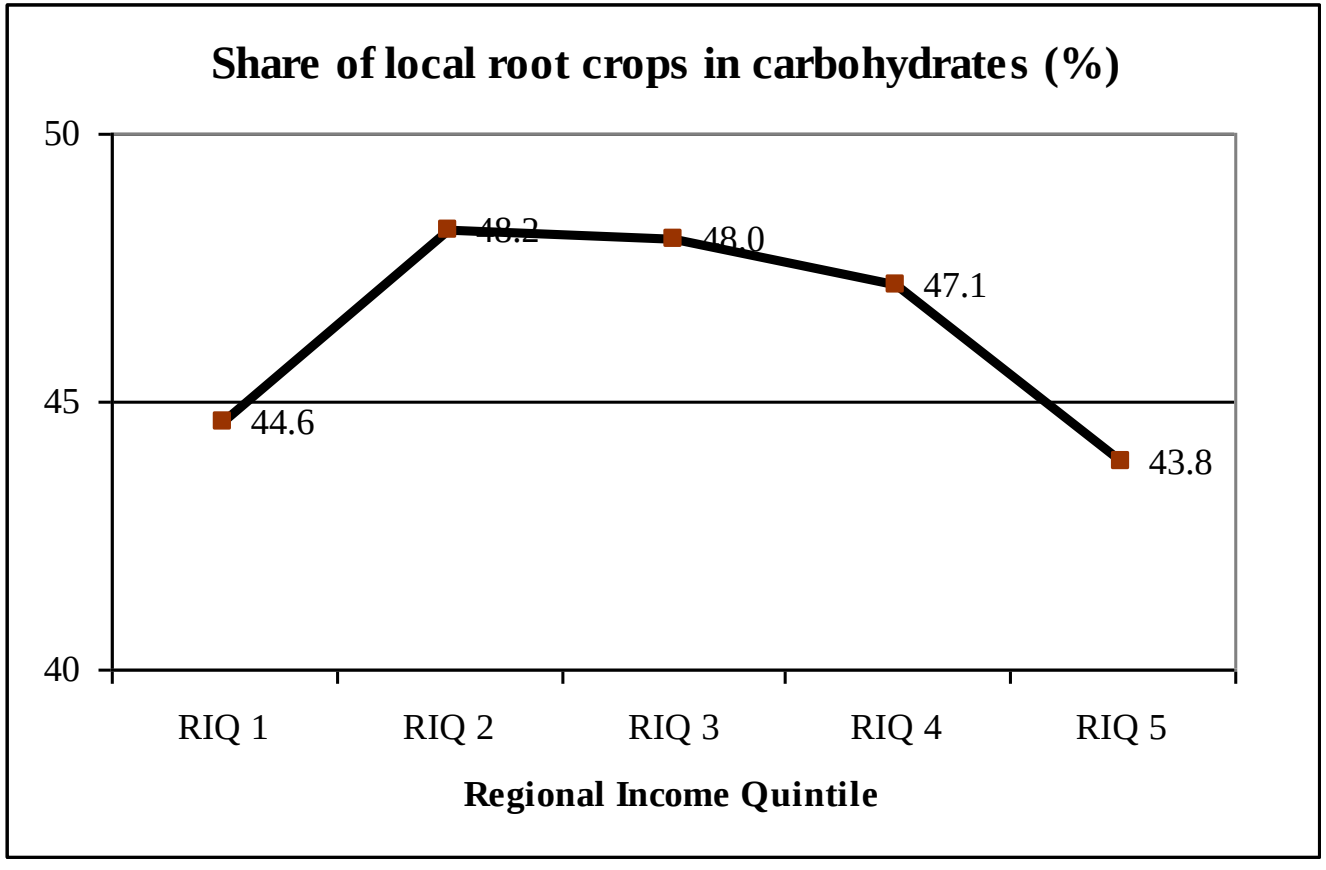
Lower demand for Fiji rootcrops

Lower farmers incomes and employment

Higher imports.

Pressure on Fiji's balance of payments.

Possibly worse nutrition.

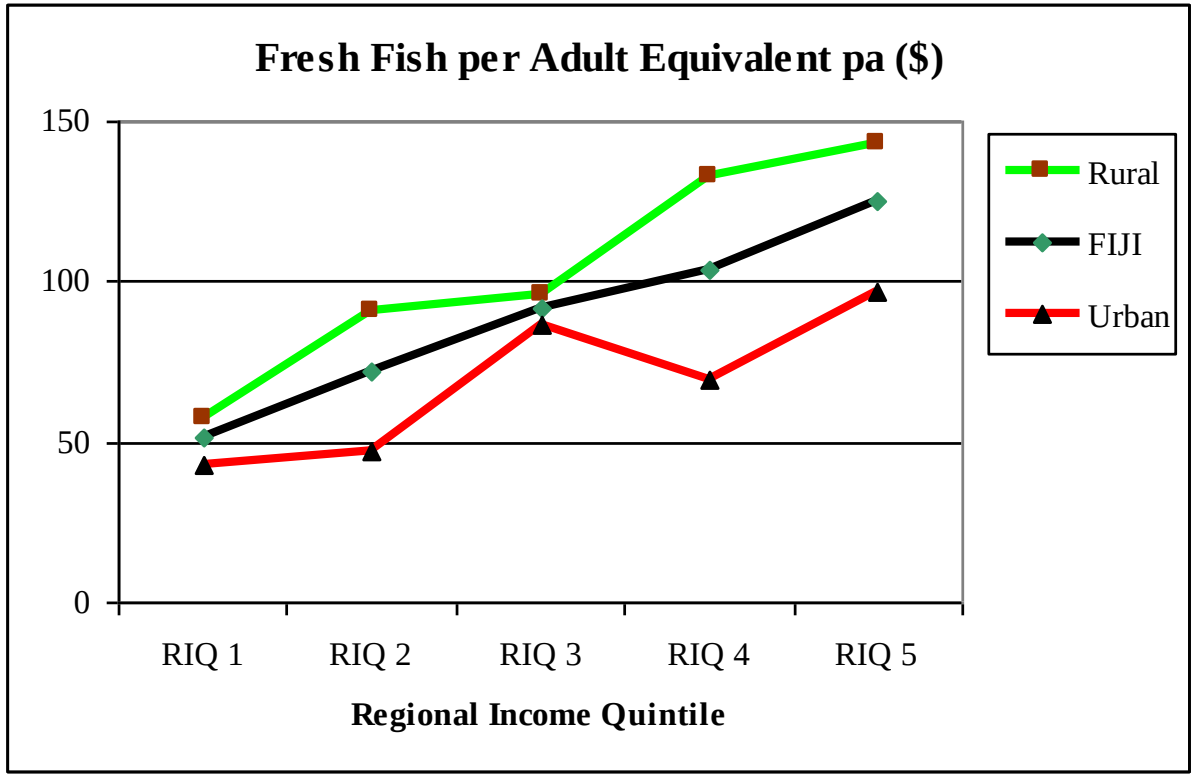


Fiji: Fresh Fish consumption?

Good news for Rural Fijians

Slightly good for Urban Fijians

Overall good news.



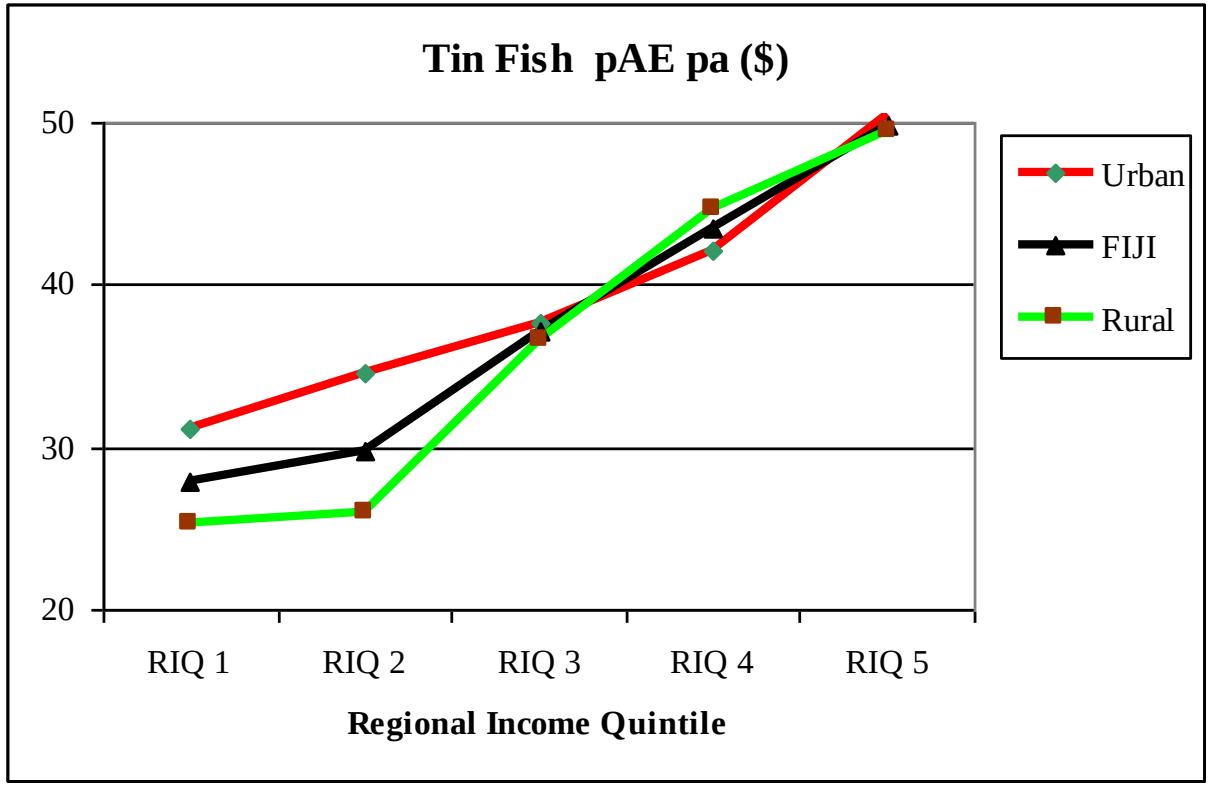
Fiji: Tin Fish consumption?

Look at the big jump for Rural Fijians at 3rd, 4th and 5th quintile.

And sharp increase for Urban Fijians in 4th and 5th quintiles.

By 4th and 5th quintile both rural people consuming as much as urban people.

While Fiji has a cannery, most tin fish consumed in Fiji is imported.

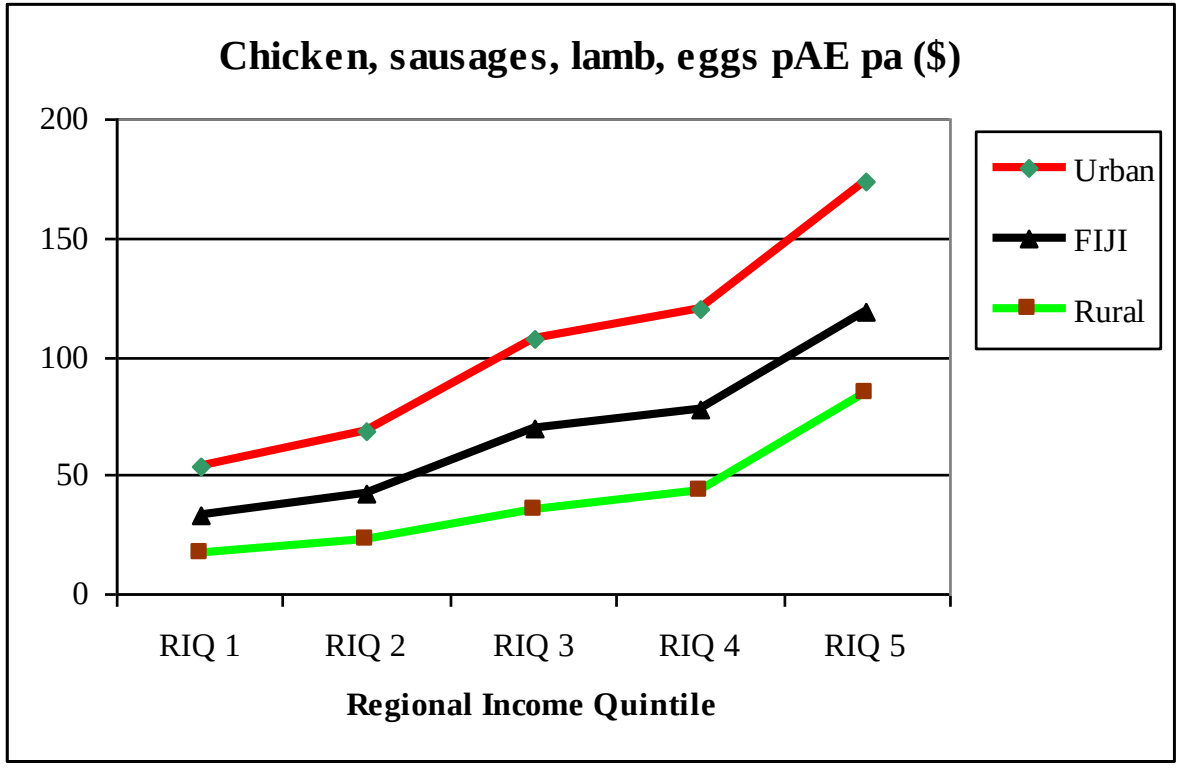


Fiji: chicken, eggs, lamb, sausages?

Same patterns of increased demand at high income levels.

Note local chicken production, but chicken feed is imported.

You health experts will know more about the health implications of these trends than me.



Fijian vegetables: just bele and rourou

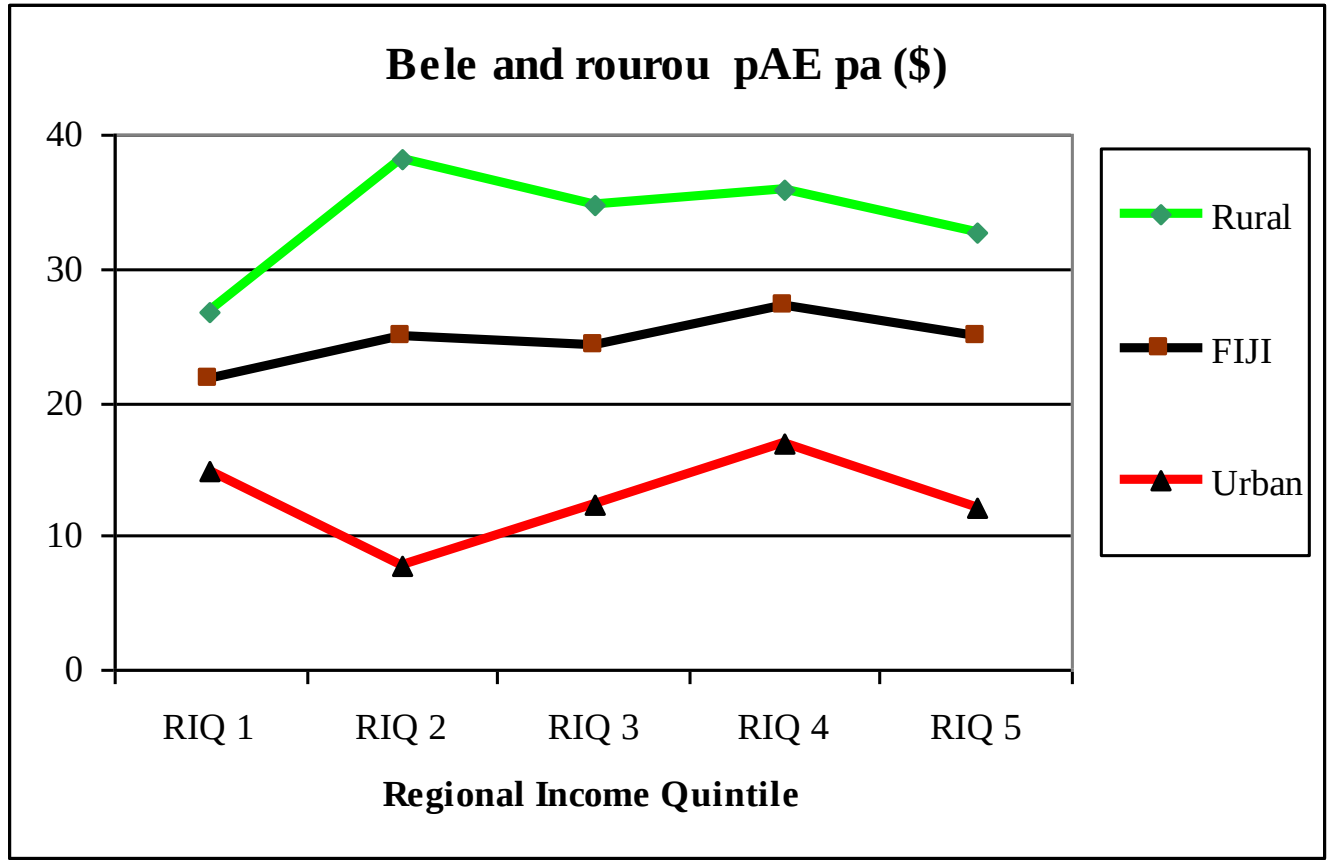
Large gap between rural and urban

But falling for rural quintiles.

Not good news.

So what vegetables are Fijians consuming?

Cucumber? Tomatoes?



Fijian sugar consumption: why is this graph extra-ordinary?
Bad news and small good news for diabetes:

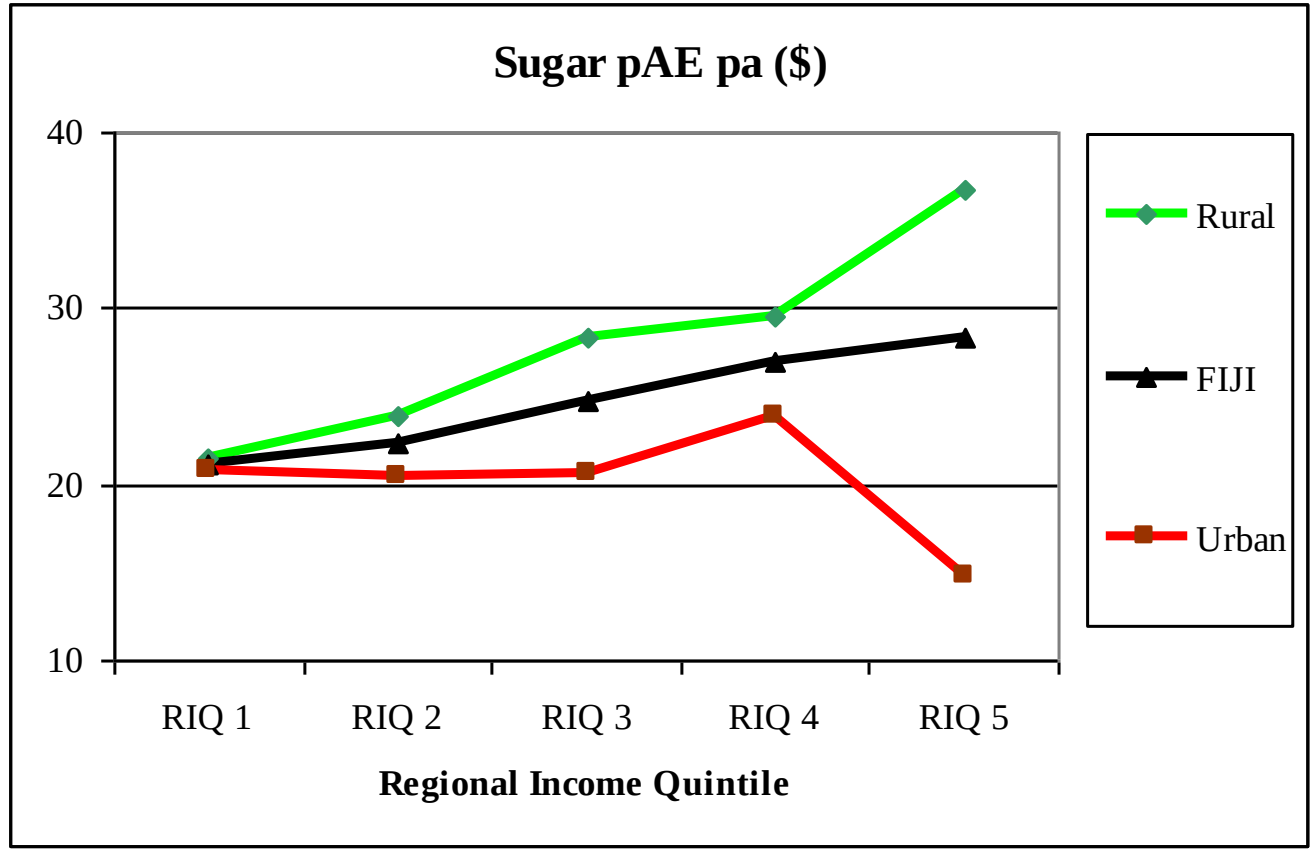
Bad news: rural consumption so much higher than urban (opposite of normal relativity)

Increasing sharply with incomes.

Good news? Urban consumption lower and dips at the highest quintile:

i.e. well-off Fijians are consuming less sugar.

What policy message for Public health campaigns? Focus must be rural.



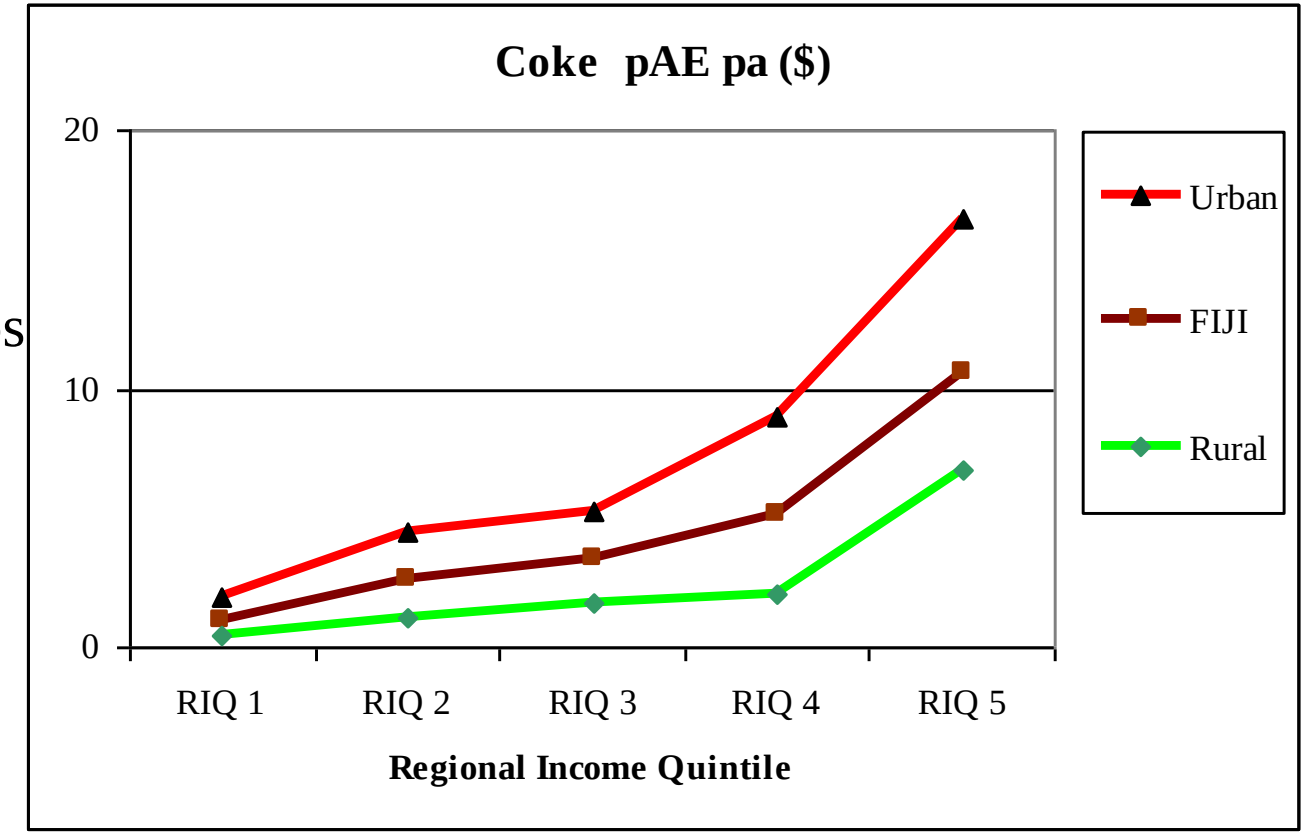
Fiji: Coke and other sugary drinks

Clear patterns for the well-off, both urban and rural.

Because of flood of ads on TV, and other media, sports sponsorships

Similar patterns for all junk foods.

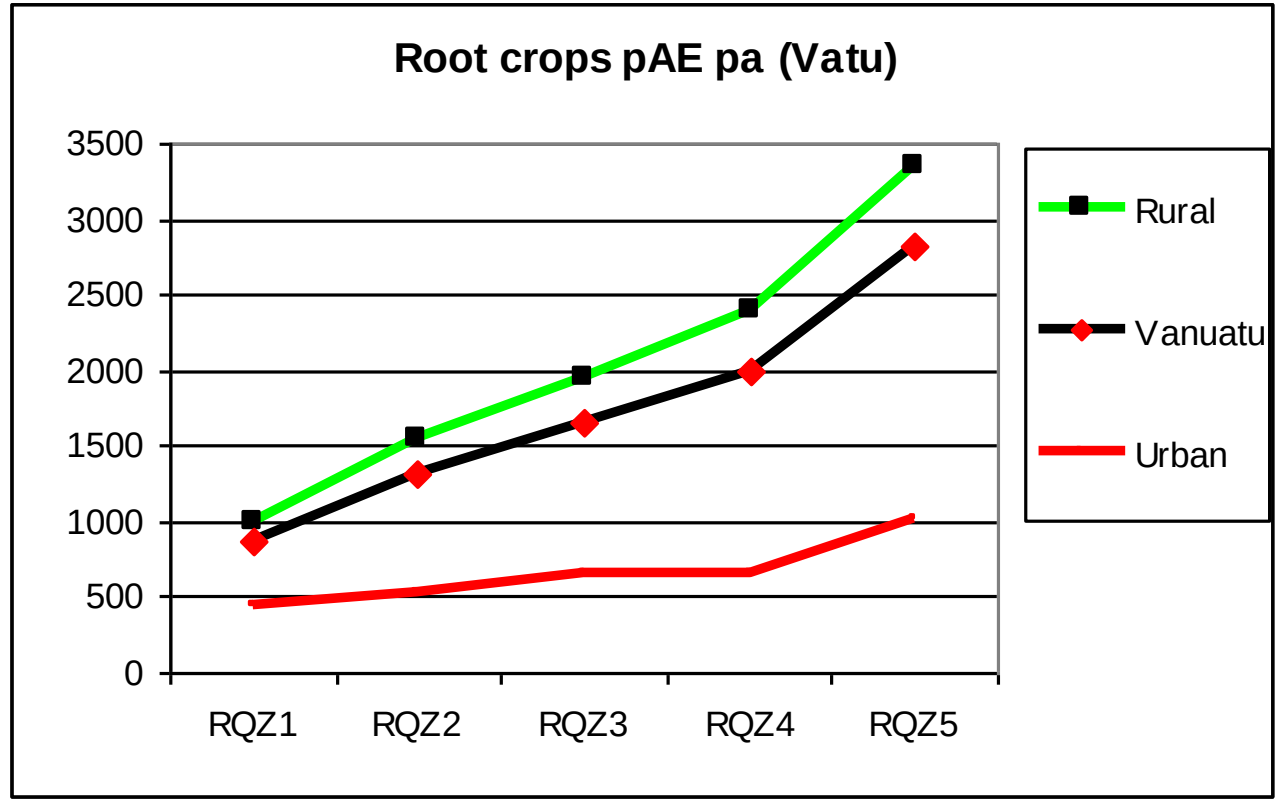
"Good" news for rural poor: probably because coke vending machines have not made it into the villages!



Vanuatu: all root-crops per AE pa ($)

Terribly low values for urban households (Vila and Luganville): what carbohydrates are they eating?

Healthy income elasticity for Rural Vanuatu: good news overall as most of Vanuatu people are rural.



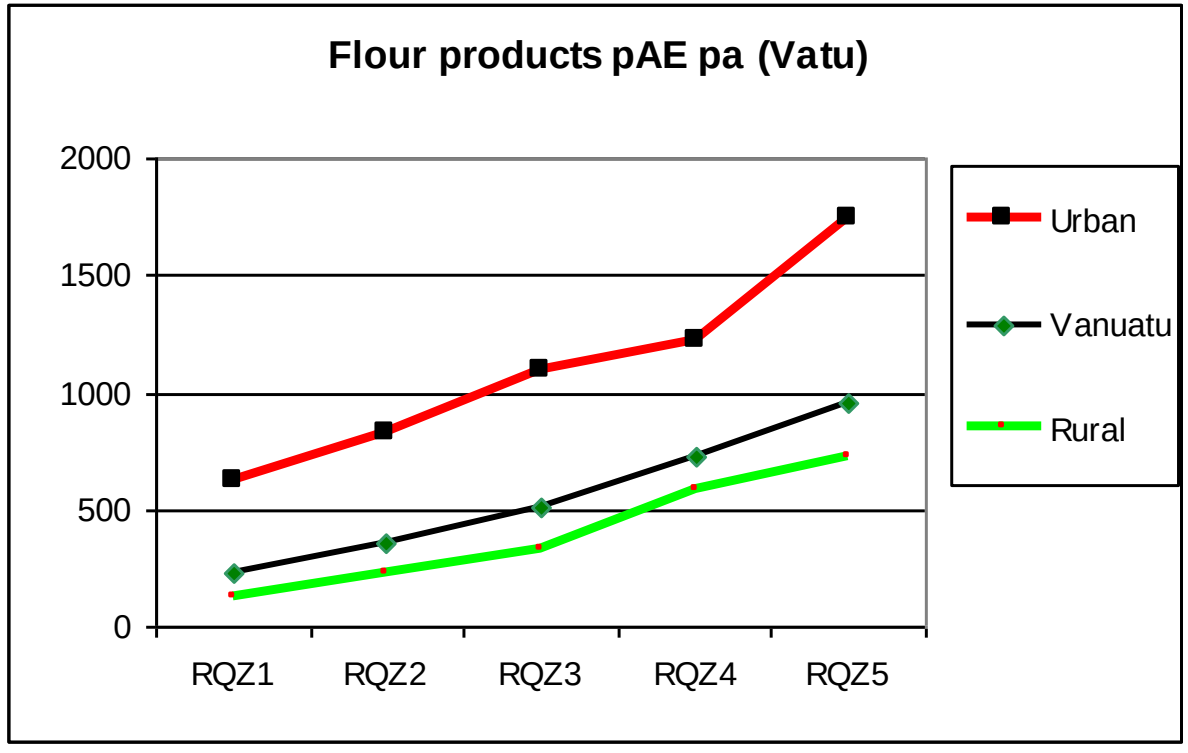
Vanuatu: Flour products pAE pa (vatu)

High urban values: clearly substituting for root crops.

Are urban ni-Vanuatu people adopting the consumption habits of non-ni-Vanuatu?

Generally upwards trend, with steep increase at upper quintiles, also for rural households.

Large gap between urban and rural

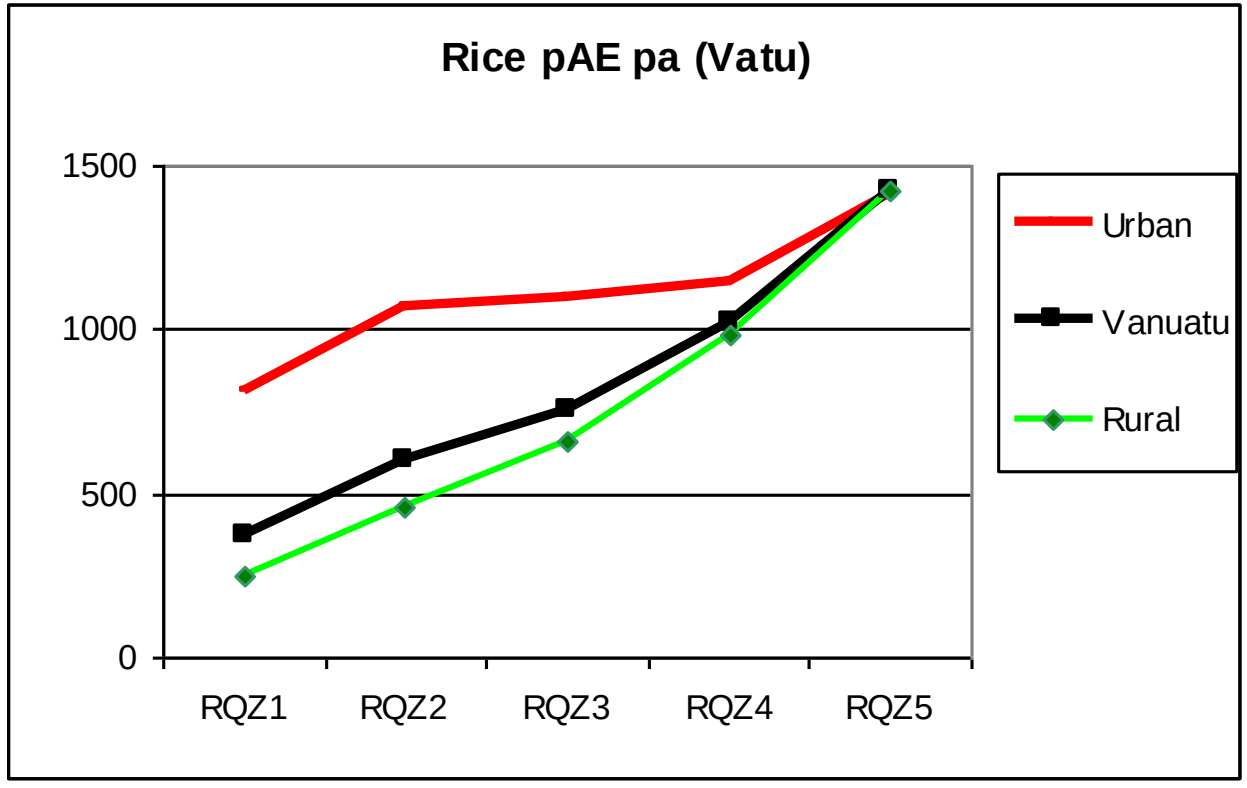


Vanuatu: Rice pAE pa (vatu)

Extremely high values for urban hh at all quintile levels:
clearly substituting for root crops

Steep rise for rural households: as incomes rise, rice consumption rockets up.

With rural fifth quintile consumption equaling the urban fifth quintile.

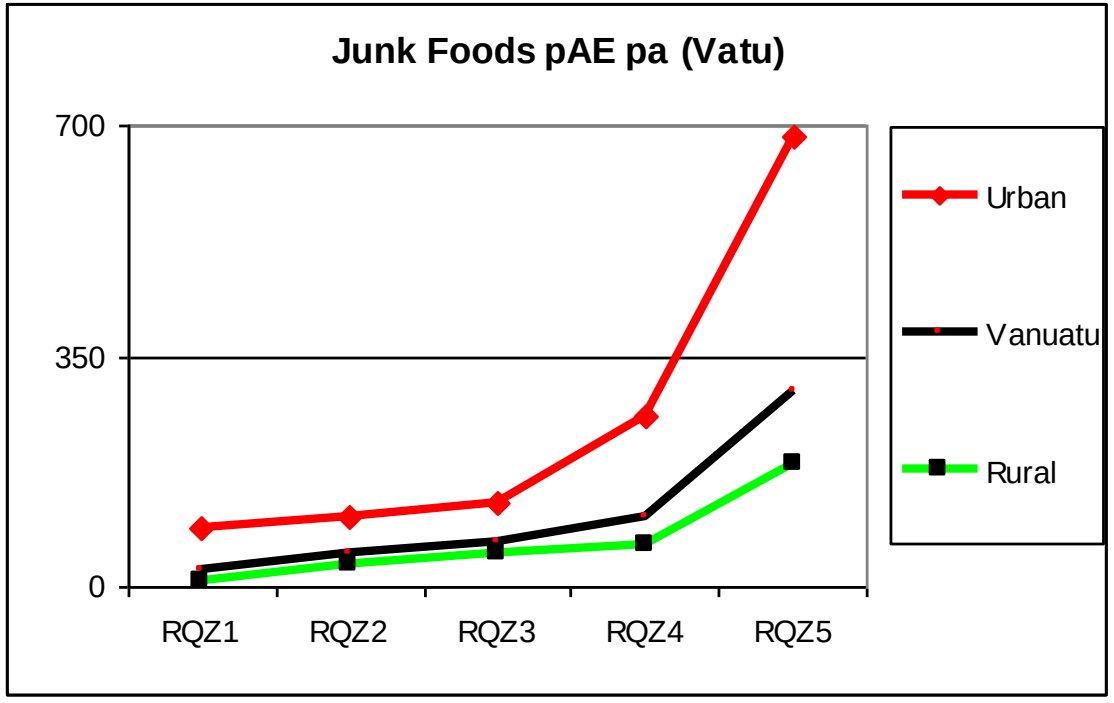


Vanuatu: Junk Foods

Steep rise for urban households from 4th quintile on.

Rise for rural hh for 5th quintile.

Low values for first 3 quintiles suggest that poverty stops the consumption of these relatively expensive foods.

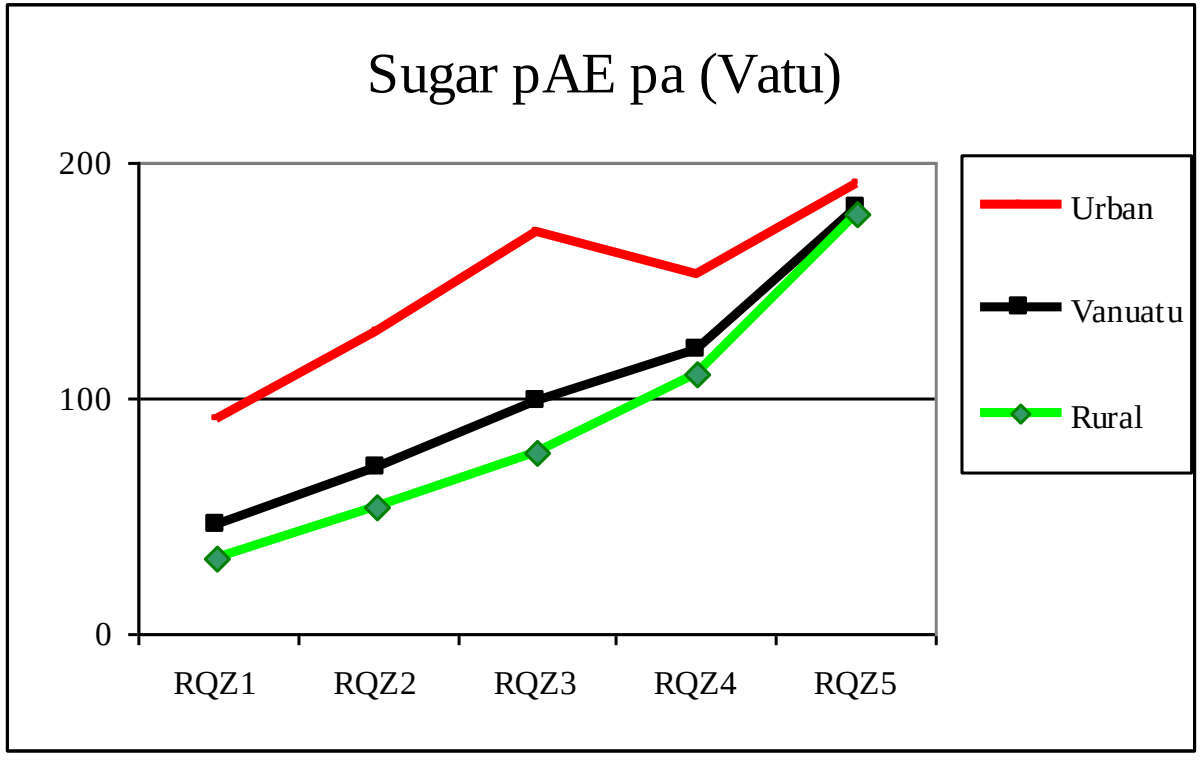


Vanuatu: Sugar consumption:

Bad news: high values for urban hh.

Slight good news for urban hh: levels off at 4th and 5th quintile:
are upper income ni-Vans more health conscious?

Rural bad news: rapid rise for rural hh after 3rd quintile-
almost equal to urban values at 5th quintile



Vanuatu: Island cabbage (bele): good news and bad news

Large gap between rural and urban

Low values for urban hh, and levels off at higher quintiles

Still good news for rural households with consumption very elastic at higher income levels.

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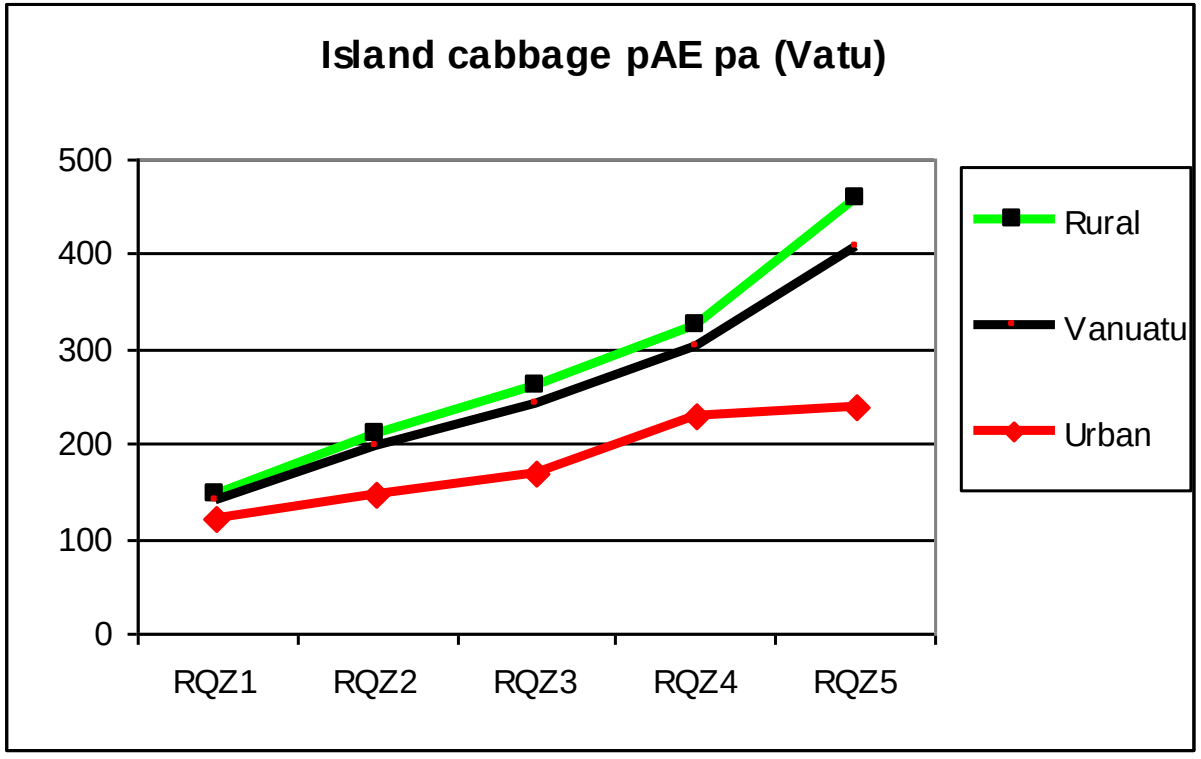
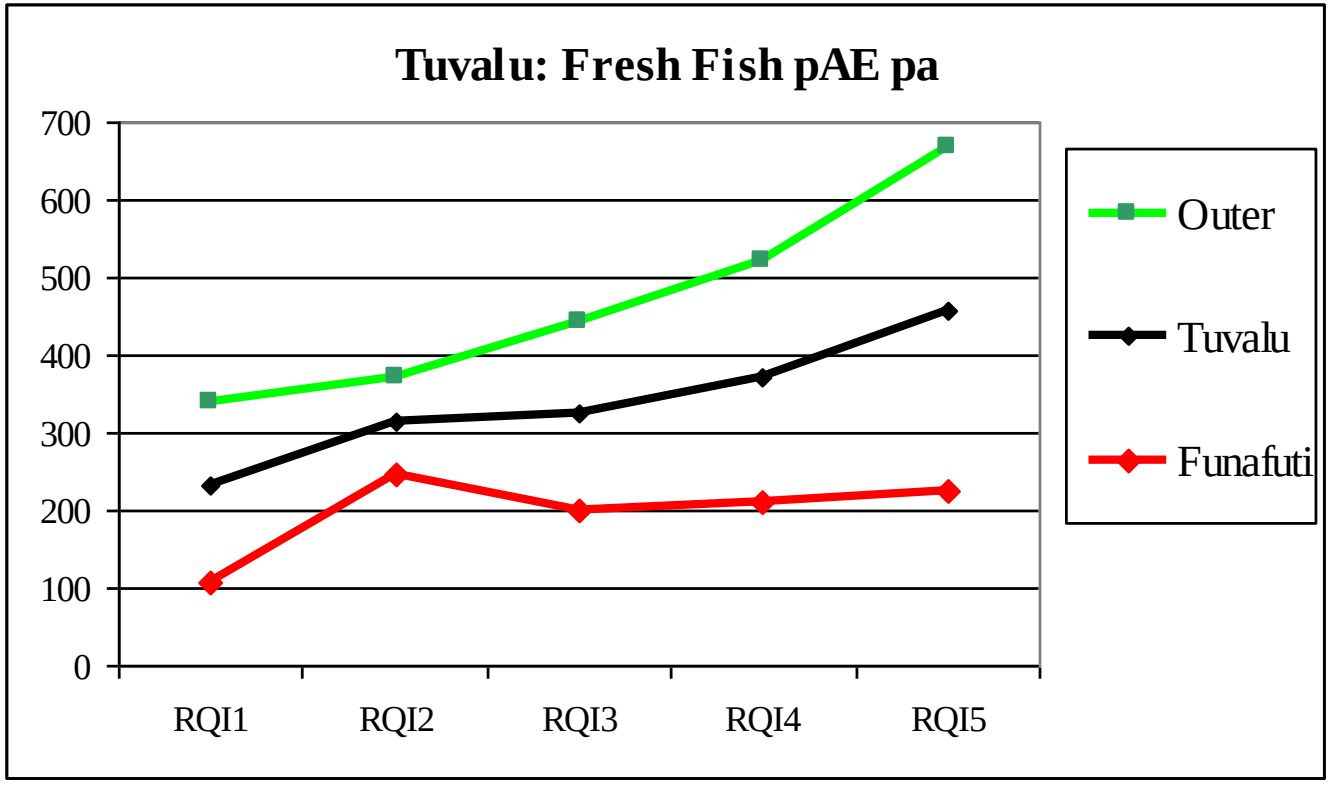


Tuvalu: Fresh Fish pAE pa

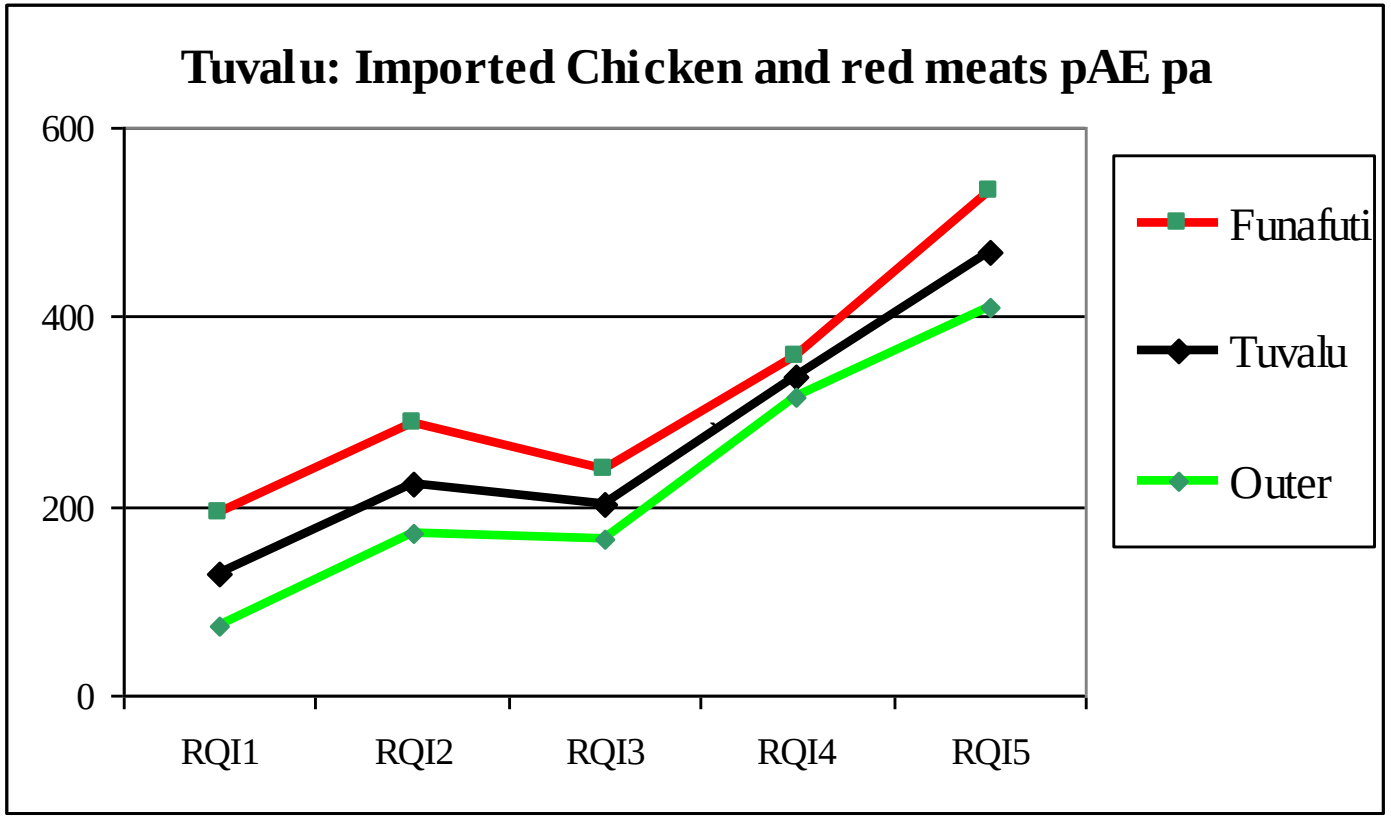
Good news: Outer Islands.

Bad news: Funafuti: low and levels off from the 3rd quintile.



Tuvalu: Imported chicken and red meats pAE pa ($): bad news

Sharp rise for both urban and Outer Islands for 4th and 5th Quintiles.

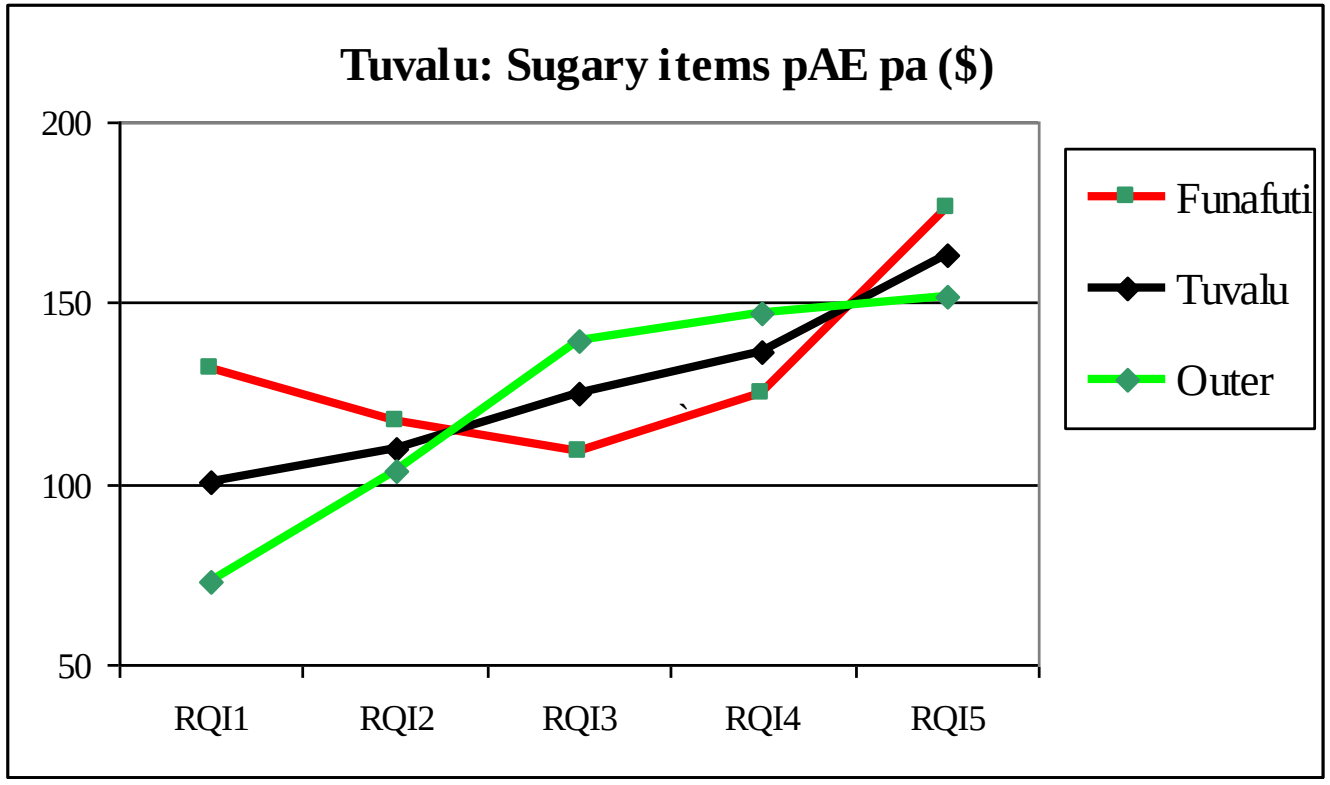


Tuvalu: Sugary items: bad news for poor

Rapid increase at lower quintiles for Outer Islands

Strange U shape to Funafuti: unusually high consumption for the poorest 40% in Funafuti; and then high values again for the 5th quintile

Is education not getting through to the poorest quintiles in Funafuti?

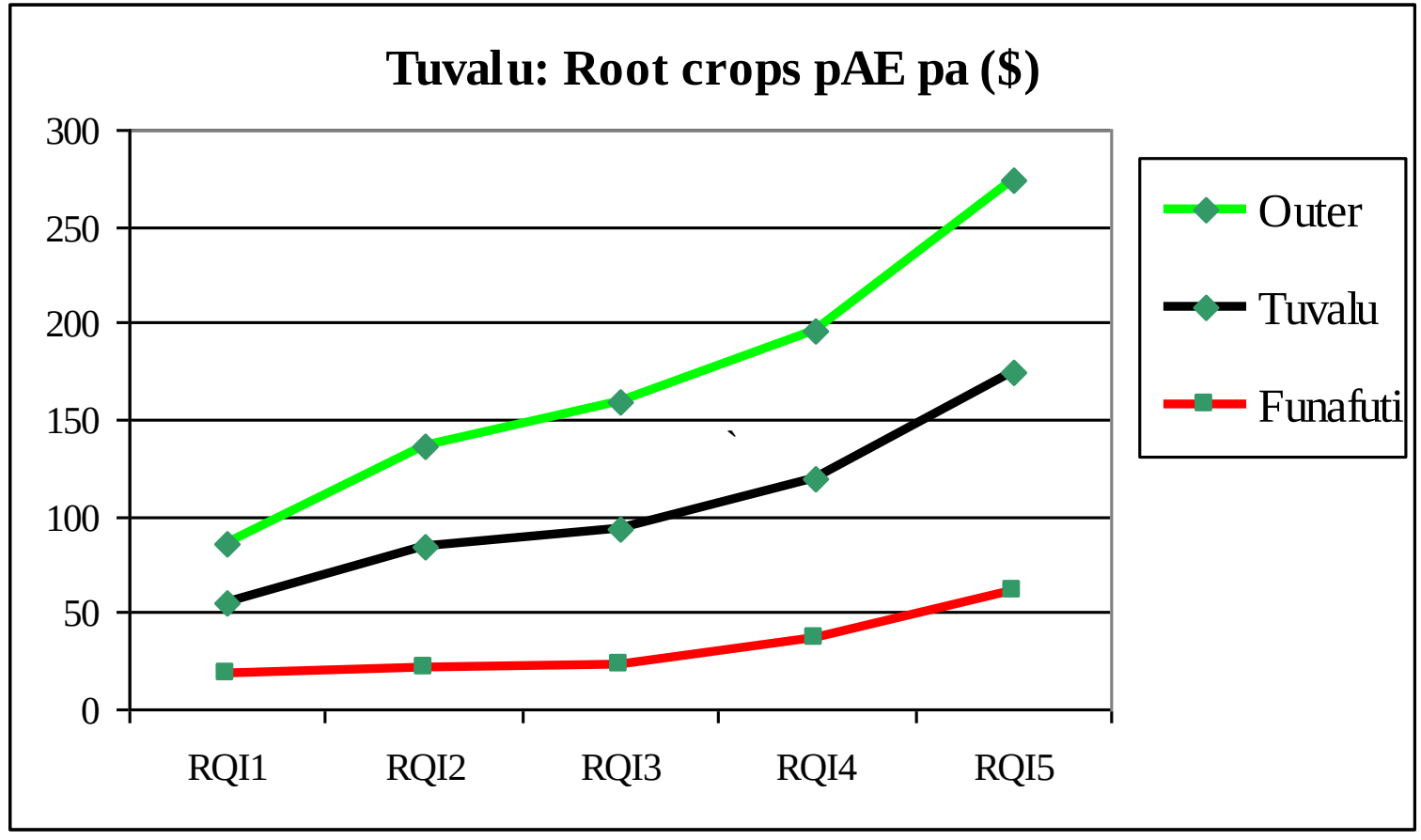


Tuvalu: root crops: good news and bad news

Good news for Outer Islands

Bad news for Funafuti: all quintiles

Large rural:urban gaps

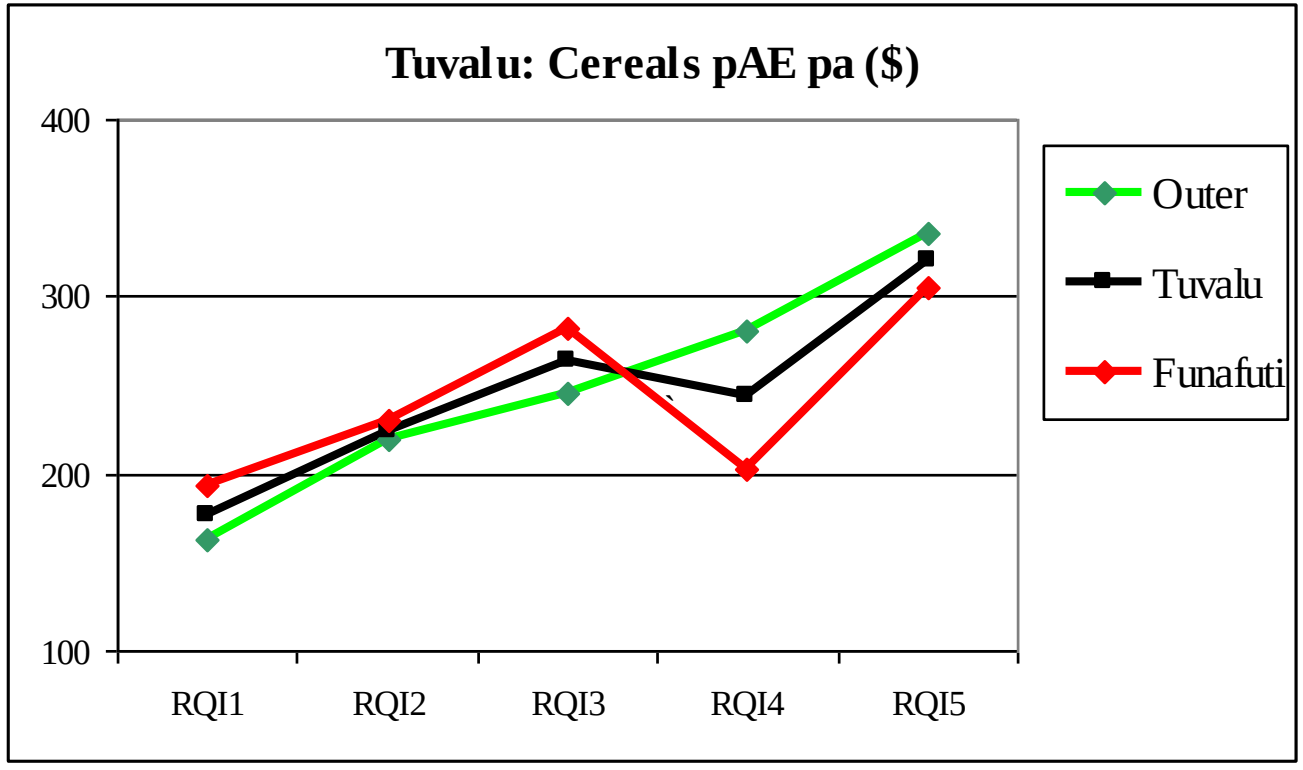


Tuvalu: Cereals

Rapid rise for Outer Islands

Strange pattern for Funafuti (may be statistical error)

Rural consumption almost as much as urban consumption



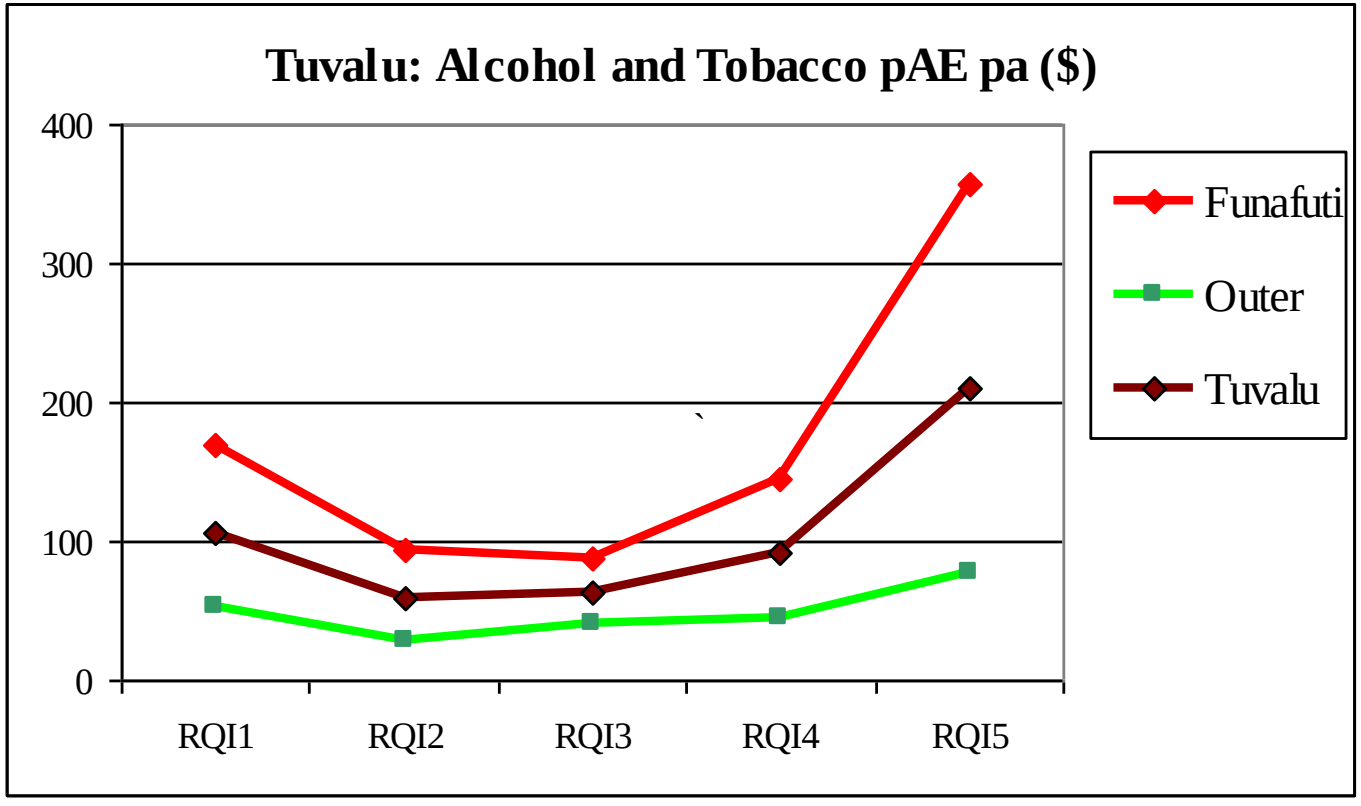
Tuvalu: “Bad Health items”: Alcohol and Tobacco

Good news Outer Islands

Bad news: Funafuti

Especially bad for poorest Funafuti quintile, and richest.

Note again: problem for the poorest Tuvaluans.



So what is likely to happen in the future for all PICs if these trends continue everywhere?

Can confidently say that low income people, when their incomes rise, will consume in the same way as the current high income people do.

Can confidently say that rural people will tend towards the urban patterns of consumption.

Ten years from now for carbohydrates:

1. Our imported grain products will be an even higher proportion of our carbohydrates: ie consuming more rice, flour products, and noodles

2. Consuming less dalo, yams, kumala, and cassava (reduced rural employment/incomes),

3. Our consumers will be more vulnerable to future increases in international grain prices, as happened recently

4. This trend must put further pressure on our balance of payments: already very high imports of food in countries like Fiji.

Evidence? Fiji HIES for 2002-03 and 2008-09 so time trends are now available

eg Dalo Exp. pAE

At all quintile levels: large decline in dollar terms: first column of numbers (-12%)

and -41% in real terms (taking into account that dalo prices have risen by 49% between).

But decreases at all quintile levels.

i.e. bad news at all income levels.

Perc. Change in Dalo pAE pa		
IPQ	Nom.	Real
IQ1	-14	-42
IQ2	-1	-34
IQ3	-27	-51
IQ4	-5	-37
IQ5	-8	-38
All Fijians	-12	-41

Fiji Rice consumption trends
interesting results: because the price of rice rose by large 98%

At all quintile levels: large increase in consumer spending in dollar terms: overall increase of 58%.
(CPI only increased by 42%)

But decrease in real terms because of the huge increase in prices.

Perc. Change in Rice pAE pa		
IPQ	Nom.	Real
IQ1	67	-16
IQ2	60	-19
IQ3	63	-18
IQ4	52	-23
IQ5	55	-22
All Fijians	58	-20

Fiji health persons here: Check:
did quantity of rice consumed decline during this period?

And did consumption of competing products, like cassava and dalo and noodles increase?
If yes, then devaluation may be a useful took to discourage consumption of imported foods.

Fiji consumption of noodles? (with only 25% increase in prices)

Large increases at all quintile levels, nominal and real.

These are astonishing results:

Look at the larger increases at the lower quintiles?

Why are the poor consuming more noodles?

Ad campaigns?

Perc. Change in Noodles pAE pa		
IPQ	Nom.	Real
IQ1	95	56
IQ2	79	43
IQ3	66	33
IQ4	53	23
IQ5	37	10
All Fijians	58	26

Predictions on future trend for PIC consumption of vegetables?

5. Our people will be consuming less of our domestically produced vegetables which are generally more nutritious than imported vegetables (except carrots)

6. With the expenditure being re-allocated to either imported vegetables, or other food products.

7. Hence PICs will be more vulnerable to nutrition deficiencies given that more nutritious local vegetables will be replaced by less nutritious imported vegetables

Predictions on PIC trends in consumption of junk foods, snacks, drinks

8. Our people will be consuming more and more of the junk foods: the lightweight twisties, bongos, ufos etc

9. Perhaps more of the sweetened fizzy drinks (unless education campaigns etc are mounted)

10. At the cost of other local snack foods

11. The nutrition of our people and especially children will continue to plummet

Macro-economic implications for PICs: worst case scenario

General thesis: Shift away from consumption of domestically produced foods

12. reduces domestic employment and incomes

13. worsens rural development, rural unemployment, increases rural poverty,

14. encourages rural:urban drift and associated pressures on urban housing, water, sewerage, education and health services, crime

15. reduces national food security especially for the poor

16. increases pressure on balance of payments

Can you seen any exception to this trend?

Big policy questions for public health planners

Why are the trends so negative for our locally produced foods?

Are there some “evil forces” out there trying to kill our local economies?

Or are there some very natural market forces driven by globalisation, with tastes of our people changing the way tastes are changing everywhere in the world?

What can be done to reverse the trends?

By Ministry of Health

By Government in general.

By the consumers themselves.

A Personal tastes and choices of consumers are predictably changing in a globalized world

All humans everywhere in the world want variety in food consumption: and they are entitled to it

Beware hypocritical policy makers who tell the general public to consume local foods like bele and rourou and island spinach; but want tomatoes/lettuce for themselves; they advocate fish & dalo for the population, but McDonalds for themselves

Challenge for food policy makers:

How do you encourage PIC consumers to freely make the right choices?

Are publicity campaigns enough?

B: Are changes being driven by unregulated advertising

Note the all pervasive and every-present ads for rice, flour, noodles, but none for dalo and yams;

Ads for Coca Cola but none for coconuts

No regulation of advertising to children directly (TV in the afternoon): Coke ads, noodles, bongos, twisties, ufos….)

No regulation of advertising to children indirectly (Coca Cola Games, Twisties Games, lotteries to win school supplies).

Challenge: can Ministry of Health regulate advertizing?

Ban sports sponsorships by junk food companies?

But who will finance the sports then?

C Is bad marketing infrastructure for local foods and drinks to blame?

You know what it is like at all our urban markets on rainy days. in Suva, Vila, Honiara, Moresby, .. anywhere in the Pacific.

Compare our local produce markets with the super-markets (comfortable a/c).

D Are our local food retailers paying enough attention to key consumer factors of convenience, packaging, etc (cf Japan)

Contrast the convenience of buying and cooking rice or noodles, with that of buying that bundle of dalo or cassava and preparing it (especially when older children have to do it)

Contrast the convenience of buying already chopped lamb chops or corned mutton, with that of buying un-gutted, un-scaled fresh (often no longer fresh because of lack of ice at road-side outlets)

Contrast the convenience and profitability of retain outlets in selling Coca Cola as opposed to selling cold coconuts

Convenience of preparing tomatos, lettuce and cucumber, with that of preparing rou rou or tubua (churaiya)

Some positive changes taking place in our markets... although not enough

Good signs? Prepared local foods in Fiji: not seen ten years ago

Fiji chopped up or peeled fresh vegetables (even duruka)

•

Prepared local foods in Solomon Islands and Vanuatu (but look at the market conditions!)

F

How facilitate healthy outlets for local foods?

New kid on the block and

Right: a dying species in Suva?
Why no Fijian carts?

E Stagnating agriculture and marketing

Poor land tenure systems everywhere

Lack of credit and general bank financing: general pattern of declining credit to agriculture; Fiji is a horror story.

Lack of any significant increase in productivity in local food-crop farming, while in the last five decades there have been large increases in productivity for imported food items- rice, grains etc.

Lack of local and export marketing.

Lack of price stabilisation and planned output:

Frequent price collapses mean that the farmer won't even cover the cost of harvesting and transport to markets: and is totally demoralized.

F high levels of rural poverty, bad education and health services rural:urban drift will continue without fail.

Cash incomes low

Poor schools, poor education, high failure rates and drop out rates

Poor health services.

Poor transport and connectivity

Poor entertainment.

Poor living conditions all round: only recent improvement is mobile revolution.

Missing all the things that urban people take for granted.

Some counter strategies to A, B, C, and D?

What are the policy recommendations suggested by the information presented here?

How change preferences? national cooking competitions to find/popularise cooking of snack foods using local foods; properly packaged

Infrastructure: proper outlets for fresh marine foods with ice, and cleaning cutting facilities etc

Domestic manufacturers: how encourage them to use local nutritious foods: look at Japan's use of kumala, radish etc.

How encourage outlets to sell refrigerated coconuts at popular eating places (as in Vanuatu)

Better rural transport infrastructure for agricultural producers

Better urban marketing facilities for agricultural producers

A counter strategy to problems in E and F: how stabilise prices?

How establish price support schemes?

Hugely difficult task where farmers will not produce consistent quality requred by export markets.

Nor will they keep to planting schedules: gluts at times, shortages at times.

Affects all agricultural products: root crops etc

Govt. Marketing Agencies: end up buying low quality produce at high prices; sell at low prices; and have high overheads because of inefficiency.

All marketing authorities in Fiji have made huge losses over time:

Difficult fiscal policy questions over Food Security (no easy answers)

Given that many PIC foods cannot compete in price with imported foods (eg rice, milk)

(i) should there by higher duty protection on imported foods? (as in Fiji now)

- is it fair that consumers should pay higher prices to protect a few farmers?
- how long should protection last?
- note that WTO is totally opposed to protection: all will end one day

(ii) should there be government subsidies for local food producers and manufacturers?

- who pays the cost?
- how long should subsidies last?
- note WTO is opposed to subsidies: all will end one day.

(iii) should the PIC currency be devalued to achieve the same result as i and ii? But note costs will go up immediately for everyone dependent on imports.

Can “government decrees” solve the problem?

Ban certain ads?

Put taxes on “bad health” consumption items? Like junk foods, fatty foods, soft drinks?

Put higher taxes on alcohol and tobacco?

What about high taxes on kava? Taxes on marijuana?

Use revenues for contra advertisements?

Ban non-nutritious food and drinks from school canteens:

But who will provide the substitutes? You cannot force kids to consume “healthy” food items?

Warning: “bio-fuel solutions” to fuel crisis and food security

With increases in fuel prices and import bills, developing countries looking at alternatives to fuel imports- including biofuel eg from cassava.

Given the large scale production required, every likelihood of major changes to land use, land costs, and domestic food prices

1. Food security of the poor may be a trade-off against fuel security of the well-off.

2. With large corporations driving policies, there needs to be great caution in embarking on such ventures, especially where private investors require state subsidies or preferential taxation treatment.

In Fiji, these proposals disappeared over the horizon; but are back again.

What might be your policy recommendations?

What major policy recommendations can you think of, out of the information in this presentation,

(a) that will work in a market-based situation,

(b) with consumer preferences not seriously undermined:

(c) may require (government “decrees”)

* for agricultural producers
* for land-owners
* for consumers
* for governments
* for Ministry of Health
* for your Bureaus of Statistics

Vinaka vaka levu

Thank you.

Questions

and

comments