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Repurposing agricultural support policies for shared prosperity in rural Fiji

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Repurposing agricultural support policies for shared prosperity in rural Fiji[*]

Kym Anderson

Abstract

Notwithstanding the increasing place of tourism exports, the rural sector and its agricultural production remain important contributors to Fiji's economy. But their contribution is compromised by policies and institutions that distort the farm sector's resource use, with too many resources employed by sugar and livestock producers at the expense of other farmers and producers of non-farm products. Subsidies to the sugar industry could be used instead to boost investment in rural public goods such as infrastructure and agricultural research. That would benefit a much larger proportion of rural people, many of whom are below the poverty line. So too would a lowering of tariffs on imports of meat and milk products. And by thereby lowering food prices in urban areas, such re-purposing of support would benefit their poorest households most. It would also lower the prices of high-protein livestock products and nutrient-rich fruits and vegetables, which could well improve nutrition and health.

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1. INTRODUCTION

In its latest report to the World Trade Organization, the Fijian Government stated that "as a small island developing nation, Fiji recognizes the importance of free and fair trade in promoting economic growth, job creation, and poverty reduction" (Government of Fiji 2023, p.17). Yet Fiji has a long history of government intervention in agricultural markets, including output and input subsidies, import protection for various industries, and the provision of marketing services. A review by Duncan and Sing (2009) concluded that many of those interventions ended in failure, even those that caused an initial burst in output. There was a policy shift in 1989, aimed at reducing import-substituting protectionism and some direct subsidies and encouraging more private-sector export expansion. However, the government returned to heavy intervention with its Commodity Development Framework in 1997 (abandoned in 2000 after many tens of millions of dollars were spent), and then again in 2004 with its Farm Assistance Scheme (which provided free farm inputs for indigenous Fijian farmers). An Agricultural Marketing Authority (AMA) also was created in 2004. AMA, trading as Fiji Agromarketing, continues to purchase, process and export cassava, fruits, vegetables and fish products, in direct competition with the private sector. And tariff protection and various direct supports for livestock and rice producers continue to be provided.

Far more important since 2010, though, has been huge subsidization of Fiji's sugar industry. That program, brought in following the demise of preferential access to the European Union's highly-protected sugar market, has already involved close to F$1 billion being transferred from domestic consumers and taxpayers (Anderson 2023). Between 2012 and 2020, the sugar transfer rose from 5% to 11% of agricultural GDP, and from 2% to 5% of government expenditure. Yet only one in nine Fijian farmers grows sugar cane.

The purpose of this article is to examine the scope for repurposing that support for sugar, and for lowering tariffs on highly-protected livestock industries, so as to boost more-competitive agricultural industries and spread prosperity more evenly in the rural areas of Fiji. In the absence of estimates of rates of assistance to non-sugar industries within Fiji's agricultural sector, one of the necessary contributions of this study is in generating such estimates.

This study is timely because a new government was elected in Fiji in December 2022 with a mandate to raise living standards by reforming the economy while bringing down its enormous debt. Following a National Economic Summit in April 2023, the government has resolved to reshape, reset and transform Fiji's economy, to make it more sustainable and inclusive. In particular, it seeks to ease policy, institutional and legal bottlenecks that have been restricting Fiji's growth for more than a decade (Ministry of Finance 2023).

Raising incomes and reducing poverty and income inequality without adding to debt problems requires raising the rate of economic growth. Firms can contribute through investing in productivity growth, and governments can accelerate those private sector efforts by investing in growth-enhancing public goods and reforming institutions and policies that have been distorting producer, consumer and investor incentives (Estevadeordal and Taylor 2013; Spence 2021).

In particular, the government can boost growth by reforming policies and institutions that are dampening Fiji's rural development. Despite impressive growth in its service sector, the rural sector still houses 45% of the nation's population and is home to 68% of Fiji's poor. *According to representative sample surveys of households in 2019-early 2020 just before COVID-19, t*he rate *of poverty in rural households was almost treble that of urban households (37% vs 14%), and very similar in all four rural Districts (ranging from 34% to 40%). The average household income in rural areas was only two-thirds that in urban areas in 2019 but, since the value of food consumption was almost the same in rural as in urban areas, rural households were able to spend barely half as much on non-food products as urban households* (FBS 2022a, 2023).

Agriculture is of course the main activity in rural areas. In 2019 it accounted for one-eighth of Fiji's GDP and one-sixth of employment, and over the 2010s for three-fifths of merchandise domestic exports and one-sixth of all goods and services exports. When COVID-19 hit and tourism stopped during 2020 and 2021, that one-sixth export share nearly

doubled and agriculture's GDP share rose by more than one-fifth. Even though tourism has since returned, *the rural sector and its agricultural production are still important potential contributors to Fiji's future economic growth.*

The article is structured as follows. Section 2 reviews Fiji's structural transformation and evolving comparative advantages, to give some idea of the international competitiveness of Fijian agriculture today. Section 3 provides for the first time a set of estimates of nominal rates of assistance to Fiji's main agricultural industries, exposing great dispersion of those rates within the sector. Those two sections provide the necessary background for an examination in Section 4 of the scope for institutional and policy reforms to boost equitable growth in Fiji's rural sector. The final section concludes by summarizing findings and their policy implications.

2. FIJI's STRUCTURAL TRANSFORMATION AND EVOLVING COMPARATIVE ADVANTAGES

2.1 Agriculture's relative decline

As in all growing economies (Anderson and Ponnusamy *2023), agriculture's relative importance in Fiji has been on a long-term downward trend. That decline is compared in Figure 1 with that of all upper-middle-income countries (UMICs) which, as a group, had the same average per capita income in 2004 as Fiji. According to those World Bank data, in the 1990s Fiji's agricultural GDP share was well above that of UMICs but by 2015 the two had almost converged – before Fiji's rose back during COVID-19 to its share of two decades earlier. By contrast, Fiji's agricultural share of employment was well below that of UMICs in the 1990s, but the latter has rapidly converged on Fiji's share over the past two decades when Fiji's GDP per capita and wages growth lagged that of UMICs (Figure 1).*

[insert Figure 1 around here]

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Farm labour productivity (value added per worker) vis-à-vis other sectors, as indicated by the difference between agriculture's GDP and employment shares, evidently was relatively high in Fiji compared with the average UMIC, but its growth has been slower in Fiji than in other UMICs (see bottom pair of lines in Figure 1(a)).

The pulling of labour out of agriculture into industrial and service sector jobs has been an important way to reduce poverty and the rural-urban income gap in many countries (Boppart et al. 2023). However, that contribution has been relatively slow in Fiji. One reason is that its share of employment in manufacturing has been shrinking, rather than growing as in the average UMIC (Figure 2). Another reason is that the proportional rise in Fiji's share of employment in services since the mid-2000s (by one-third) has been no faster than in other UMICs (Figure 1(b)).

[insert Figure 2 around here]

The other main pathway to raising farm labour and total factor productivity is technological change on the farm and throughout the agri-food value chain (AVC). That increases farm output, but if the new farm technologies are labour-saving it can push labour off farms and reduce agriculture's share of national employment. This need not reduce total employment in rural areas though, because some of those rural household workers no longer needed on farms tend to be attracted to firms upstream or downstream in the AVC as the use of purchased farm inputs and the packing or processing of farm outputs and their transporting to more-distant markets increases (Gollin and Probst 2015; Barrett et al. 2022). Those expanding AVC activities are often located in rural areas, even though their employment is recorded as being in the food processing part of manufacturing or in the transport services sector.

Total output of agricultural production in Fiji declined by nearly one-third over the 1990s and 2000s. The declines were concentrated in sugar, tree crops, rice and beef. It has since been growing, and at a rate similar to that in other small island developing countries (Figure 3). The more-recent rises were dominated by tubers, chicken, eggs, some oleaginous fruits and beef (mostly substituting for imported foods). The contribution of different products to agricultural value added has thus changed dramatically, with sugar being replaced by yaqona and taro as the most important farm outputs in terms of value added. Sugar is still the agricultural sector's main export industry though, apart from mineral water.

2.2 Evolving comparative advantages

Being a relatively small economy remote from the world's major markets, Fiji will always have a strong comparative advantage in only a few products (Venables 2004; Gibson 2007). It is normal for comparative advantage to start in farm products, and for a country to diversify only as and when its non-farm capital per worker grows (through off-farm investments by farm and non-farm households or by the importation of capital) and its costs of trading non-farm products fall, both relative to the rest of the world (Anderson and Ponnusamy 2023).

Even though Fiji's arable land area per capita is only 47% of the world average, and only one-sixth of its land area is considered agricultural (compared with a little over one-third in the rest of the world), Fiji's comparative advantage in agriculture might persist until there is a sufficient fall in trade costs and rise in productivity in other sectors such as manufacturing or more likely tradable services. That is consistent with the retention of agriculture's share of Fiji's goods and services exports in the 30-40% band over the past two decades (Figure 4).

The share of farm products in Fiji's total exports of goods and services is still around twice the world's share, notwithstanding the major decline in sugar's contribution. When sugar is excluded, that index of 'revealed' comparative advantage has trebled since the trade reforms that began in 1989, averaged 2.8 in the 2010s. Much of that was because of the emergence of mineral water exports though: when they are also excluded, the rise in the RCA for the rest of agriculture is only half as large. Meanwhile, the index for manufacturing has halved (from 0.4 to 0.2) and that for international tourism has risen by more than 50% (from 4.0 to 6.9). Note, though, that the index for exports of non-tourism services has more than halved, falling from 1.5 in the latter 1990s to 0.6 in the 2010s (Table 1). This suggests the country continues to have a strong comparative advantage in at least a few farm products, alongside tourism.

However, the 'revealed' comparative advantage index focuses only on exports. The growth of farm exports in the last four decades of the 20th century was accompanied by equally rapid growth in the value of agricultural imports. Since the mid-1990s imports of farm products have outpaced exports such that the value of their net exports has declined rapidly and become negative (Figure 5(a)). Most of that decline is due to the fall in sugar exports. When sugar trade is excluded, a trade deficit in non-sugar agriculture becomes evident. That can be seen by calculating the trade specialization index, defined as net exports divided by exports plus imports of agricultural products (and so ranging between -1 and +1), first with sugar included and then without sugar. Figure 5(b) reveals that the index for non-sugar agriculture has been always negative. True, it has been trending upwards since the early 1990s following the policy switch in 1989 away from inward-looking protectionism to a more export-oriented approach led by the private sector (Duncan and Sing 2009); but it nonetheless remains negative and, when mineral water also is excluded, it has increased very little this century.

[insert Figure 5 around here]

These trade indicators raise the question as to what agricultural industries would be strengthened if Fiji were to adopt a more level playing field in terms of rural institutions, industry subsidies, and tariff protection from import competition. To answer that question, it is necessary to estimate rates of government assistance to all key industries within the (non-sugar) agricultural sector to compare with those provided by Anderson (2023) for sugar.

3. *STRUCTURE OF INDUSTRY ASSISTANCE WITHIN THE FARM SECTOR*

Of the policies that have contributed to past developments in Fiji's rural sector, the most important in the past decade apart from import tariff protection has been heavy financial assistance to the declining sugar industry. As noted above, almost F$1 billion has been transferred from domestic consumers and taxpayers to that industry over the past dozen years (Anderson 2023). By contrast, less than F$0.7 billion has been expended by the government on the rest of agriculture (through the Ministry of Agriculture) over that period –

even though non-sugar farm production accounted in 2021 for 95% of agricultural value added. That is, the vast majority of assistance to the crop sub-sector has gone to sugar cane growers and millers. Yet that industry has nonetheless declined: during 2015-19 it accounted for just 0.7% of total GDP, down from 2% during 2010-14. Budgetary assistance is also provided to the much-smaller copra industry (F$1.2 million annually in recent years). As well and more importantly, livestock production is assisted via import tariffs, as is rice growing to a smaller extent.

That above support to the sugar industry is complemented by a requirement that land previously leased for sugar can only be used to produce cane, thereby further discouraging other farm industries in Fiji (Prasad and Tisdell 1996; Kurer 2001; Lal et al. 2001). In theory, land leasing need not be a constraint on efficient farm production (Hsiao 1975; Otsuka et al. 1992). But it is if – as in Fiji – there are restrictions on the use of the land, if the security of the lease is uncertain, and if the land tenure system makes it difficult to reap economies of size or use that land as collateral for credit. Fiji's land restriction has slowed adjustment to the major decline in private profitability of sugar growing after the EU reformed its sugar policy from 2006. Had cane growers been free to move to more-profitable cropping of that land (Singh 2020), Fiji's sugar cane area would have fallen even more over the past dozen years and the monopoly Fiji Sugar Corporation (a state-owned enterprise) may have had to close more of its mills.

The nominal rate of assistance (NRA) to Fiji's sugar industry grew from 16% in 2013-16 to 43% in 2021. That contrasts with 2021 NRAs of just 3% for the coconut+copra industry and zero for other agricultural export industries, such that the weighted average NRA for the exporting sub-sector is just 9%. If one assumes the NRAs for import-competing industries are their import tariff rates (i.e., ignoring any non-tariff import restrictions and any offsetting tariffs on imported intermediate inputs such as livestock feed), the weighted average NRA in 2021 for the import-competing sub-sector is 30%. That is just over twice the sectoral average of 14%, whereas the export industry average is just two-thirds of the sectoral average and almost zero if sugar is ignored (Table 2).

[insert Table 2 around here]

Fiji is thus not dissimilar to the average developing country in 2005-09 in that the latter had an estimated agricultural NRA of 11% for its import-competing sub-sector.

However, the average NRA for the exporting sub-sector in those years is -3% for developing countries and 3% for high-income countries (Anderson et al. 2013) – and that high-income country average would be virtually zero in more recent years following the 2015 decision by the WTO membership to phase out farm export subsidies. Fiji is therefore *very* unusual in assisting so heavily its sugar exporting industry.

Furthermore, the support for sugar includes substantial grower subsidies for fertilizer and pesticides. True, those pollutive chemical inputs were subsidized also for non-sugar farmers in the past, but are no longer. And the large transfer to sugar farmers since 2010 has occurred during a period of high external debt that has averaged more than 30% of gross national income (compared with an average of just 15% in the 2000s). Between 2012 and 2020, the sugar transfer rose 2% to 5% of government expenditure.

Meanwhile, the Ministry of Agriculture (whose mandate excludes sugar) has received an average of around just F$60 million per year over the past decade for its various support programs, including for key public goods such as rural infrastructure and agricultural R&D. That represents just 3% of the gross value of Fiji's non-sugar farm production. It is only two-thirds of what has been transferred to sugar production in that period, even though non-sugar production accounts for 95% of agricultural value added.

Also of note is the high degree of tariff protection from import competition afforded the chicken, pork and milk industries (32%) and to a lesser extent the rice and beef industries (15%). Poultry is especially noteworthy, because intermediate input costs are three-quarters of the gross value of growing and processing chickens at domestic prices. If tariffs on animal feed imports were zero, value added by the poultry industry at international prices would be almost zero (Figure 6(a)). For comparison, Figure 6(b) depicts value added at domestic prices in the much bigger sugar industry, and what it has been net of assistance to that industry. Strikingly, value added by this industry was less than the transfer to it from the government and consumers in each of the four years 2018-21.

[insert Figure 6 around here]

The middle column of Table 2 shows how the gross value of Fiji's farm production was spread across various industries in 2021. The adjacent column shows value added at the same domestic prices. The export industries as a group are equally important by both measures, accounting for three-fifths of the sector, while the import-competing livestock and

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grain sub-sector's share is only half as large in value added as in gross value terms (11% compared with 22%). Of even more importance, though, is the comparison with the final column of Table 2, which measures value added at international prices. Even if sugar's share of that is assumed to be zero rather than negative, livestock's share shrinks to just 2%. Evidently the most-assisted farm industries (sugar, poultry, pork and dairy) are contributing almost nothing to the country's GDP when their output is valued at undistorted prices.[1]

More generally, in 2022 Fiji had a much higher average tariff on imported agricultural goods (18%) than on imports of non-farm products (6%) according to WTO (2023). From an efficiency viewpoint, that means too many resources are being allocated to farming relative to other sectors producing tradables. But if for political reasons it is not possible to withdraw current support to rural areas, there would still be much to gain if that assistance to farmers were to be distributed more evenly to create a leveller playing field across industries within the rural sector. Given the huge transfers to the sugar industry, plus very high tariff protection from import competition for a few other agricultural industries, there is much scope for re-purposing such farm support so as to accelerate national economic growth and improve well-being, especially for the many poorer households in rural areas not currently benefitting from those support programs.

4. REFORM OPTIONS FOR BOOSTING GROWTH AND SHARING PROSPERITY MORE EVENLY IN RURAL FIJI

Assisting/protecting a subset of farm industries is both inefficient and inequitable. This is mainly because it is equivalent to taxing the production of all other farm industries that could employ those same land, labour and capital resources. It also reduces the extent of risk-reducing diversification by rural households. And it also makes other (non-farm) sectors producing tradable products less able to attract intersectorally mobile resources.

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[1] Had more information been available on distortions to intermediate inputs into the various farm industries, it would have been possible to also compare effective rates of assistance to value added (as distinct from the above-reported nominal rates of assistance to the gross value of production – see Corden 1971 for the distinction). The dispersion across industries of ERAs would be far greater than that of NRAs.

If the highest agricultural tariffs were to be lowered along with price support for sugar and copra production, that would greatly level the playing field within the agricultural sector as well as between it and the other sectors producing tradables. Such a levelling would lead farmers to move to alternative activities within agriculture and/or to non-farm opportunities. The latter would include agri-food value chain activities in rural areas – ones in which the country is more internationally competitive. That happened when Fiji moved away from an import-substitution food policy in 1989, for example (Duncan and Sing 2009). Recently too there is evidence that sugar farmers have found numerous other crops to be more profitable than cane growing even in the presence of high supports for sugar. Singh (2020), for example, found for the Lomawai area that sugar farmers who have been diversifying their crop mix are reaping profits from those alternative crops that average well over twice those from sugar. Around 60% of those growers are aged 55 years or over, with the younger generation showing less interest in cane farming (LMC International 2016), so if there were to be a phased reduction in sugar support then many of those growers would retire. A voluntary retirement support scheme (such as the one Mauritius funded) could accelerate that form of adjustment.

Assisting sugar production with fertilizer and weedicide subsidies is particularly inefficient and inequitable, because it encourages the use of those pollutive inputs relative to that of other farm inputs, and it benefits most those with the largest farm areas. The sole supplier of fertilizers and weedicides to cane growers, South Pacific Fertilizers Ltd (SPF), also is likely to have retained some of the benefit of subsidized use of those inputs, since that distribution service is regulated so as to be not contestable. Moreover, insofar as those chemical inputs are pollutive of soil, water and air, the optimal intervention would be a tax rather than a subsidy on their use in farming. Apart from improving the environment, such a policy swap would also make it easier for those farmers wishing to avoid chemical inputs to claim to be organic producers.

Assistance to sugar producers is inequitable also because it raises the profitability and hence value of sugar-growing land in direct proportion to the size of each person's holding (Ciaian et al. 2021). It thus benefits the largest/wealthiest most and the poorest cane growers least (as found in simulations by Rakotoarisoa and Chang 2017, p. 39).

Even if the price-stabilizing component of the Sugar Stabilization Fund was able to perfectly stabilize sugar prices domestically, that would not stabilize farmer incomes

completely because there would still be weather-induced yield fluctuations (which also destabilize national foreign exchange earnings), and sugar contributes only a part of farmers' net incomes (especially if one includes remittances). More-targeted instruments for dealing with rural income fluctuations are available at much lower social cost (IAC 1978).

While there may be a social benefit in terms of human health from setting a high consumer price for raw sugar, the present mechanism is not the optimal way to achieve that social benefit. This is because the revenue from that consumer tax equivalent goes to sugar producers rather than into consolidated revenue for more generic uses. As well, many imported processed foods and beverages that contain sugar escape that tax and so crowd out local manufacturing of sugar-rich products (unless a border tax adjustment prevents that). Should society wish to retain a high tax on sugar consumption for health reasons, a more efficient arrangement than the current arbitrary setting of a high wholesale price would be to impose instead an excise tax on all sugar-rich processed foods, both domestic and imported.[2]

What scope is there for re-purposing transfers currently going to the sugar industry (not to mention reducing protection of livestock industries) for greater social benefit without making farm households worse off? The answer is plenty, and in terms of not just economic efficiency but also equity and environmental outcomes.

The F$112 million per year that was transferred to Fiji's cane growers on average during 2018-21 was equivalent to 4.8% of all government expenditure in that period. The following are examples of how that sum could be much better spent by the government.

- Greater investment in basic education and health in rural areas, and vocational training for the less-skilled, would help sugar growers and other farm families to become better farm managers or labourers and, for those wishing to migrate to non-farm occupations, to make their transition easier and more lucrative in the long run.
- Higher-payoff investments in agricultural research and extension would be possible by integrating the Sugar Research Institute of Fiji into an all-encompassing Crop and Livestock (or Farming Systems) Research Institute to re-invigorate R&D following the emigration of scientists after the coups of 1987, 2000 and 2006. That could boost the welfare of far more farmers and landowners, and also of consumers insofar as the

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[2] According to Mounsey et al. (2022), in 2018 Fiji increased the excise duty for imported sugar-sweetened beverages (SSBs) to F$2 per litre while retaining a lower tax for locally produced SSBs of F$0.35 per litre.

farm productivity growth that it would stimulate lowered prices for net buyers of foods.

- The currently separate expenditures on rural roads by the Ministries of Sugar Industry and of (non-sugar) Agriculture could be combined and expanded to generate a higher payoff from rural public infrastructure investments. Benefits from reducing transport/logistics costs in all rural areas would be large according to IFC (2022), and would be shared between all farmers and the buyers of their produce, boosting opportunities for subsistence farmers to sell their outputs and labour to a broader range of markets.

- More investment in rural law and order could reduce crop theft, which has been discouraging the planting of high-value crops according to Duncan and Sing (2009).

In addition, several institutional reforms could boost the efficiency and productivity of the agricultural sector. Perhaps the most critical have to do with the *farmland leasing arrangements administered by the* iTaukei Lands Trust Board (TLTB)*. The TLTB appears to be a very high-cost regulator: it charges 10% of lease rentals for its services, and it places onerous conditions on lease renewals. If sugar leases were treated the same as other agricultural leases, that would lower the cost of adjustment of farmers' crop mixes to ever-changing relative profitability of various farm activities. That need not preclude the Fiji Sugar Corporation continuing to contract those cane growers wishing to stay in the sugar industry. Indeed if it were made easier for cane growers to take over neighbours' leases, economies of size could be reaped including through more use of mechanical harvesting, so cane yields per hectare and sugar yields per tonne of cane would rise, even if the number of cane growers fell. Overall sugar output may even rise, especially if premium bonuses were paid for higher quality cane in place of the current price that is paid regardless of quality.*

5. SUMMARY OF FINDINGS AND POLICY IMPLICTIONS

Notwithstanding the increasing place of international tourism services in Fiji's economy, the rural sector and its agricultural production remain important contributors. But their contribution is compromised by policies and institutions that distort the farm sector's

resource use. In particular, too many resources are being employed by sugar and livestock producers at the expense of other farmers. Subsidies to the sugar industry could be used instead to boost investment in rural public goods such as infrastructure and agricultural R&D. That would benefit a much larger proportion of rural households, many of which are below the poverty line. It would lower food prices in urban areas, proportionately benefitting their poorest households most. So too would a lowering of tariffs on imports of meat and milk products.

A smoother transition away from sugar production could be achieved if the *farmland leasing arrangements administered by the* iTaukei Lands Trust Board were streamlined and sugar leases were treated the same as other farmland leases.

Re-purposing current farm-support programs so as to allow more (and more-effective) investment in rural infrastructure and R&D would alter relative prices of various foods in retail markets as well as at the farm gate. The consequent changes in the food consumption mixes of both rural and urban households could well improve nutrition and health outcomes, by lowering the prices of high-protein livestock products and nutrient-rich fruits and vegetables.

Re-purposing support policies is politically difficult though, and becomes more so the longer those supports are in place (Anderson et al. 2013). However, reform can be made easier the more information is provided on the consequences of current versus alternative policies. To estimate the direction and size of various economic, social and environmental consequences over time of re-purposing current support programs, it would be helpful to have a dynamic computable general equilibrium (CGE) model of the Fijian economy with in-built regional and household structures. Gounder (2013) reviews past CGE models for Fiji and generates another one based on Australia's ORANI model, but none is based on a recent national input-output table. Were the FBS able to generate an up-to-date I-O table to supplement its recent household survey data (FBS 2022a), it would not be a big step to build a state-of-the-art CGE model for the new government to use in testing various policy options including those discussed above.[3]

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[3] For reviews of the value of such CGE modelling in consultations and dialogues surrounding major economic reforms in Australia, see Powell and Snape (1993) and Dixon (2008).

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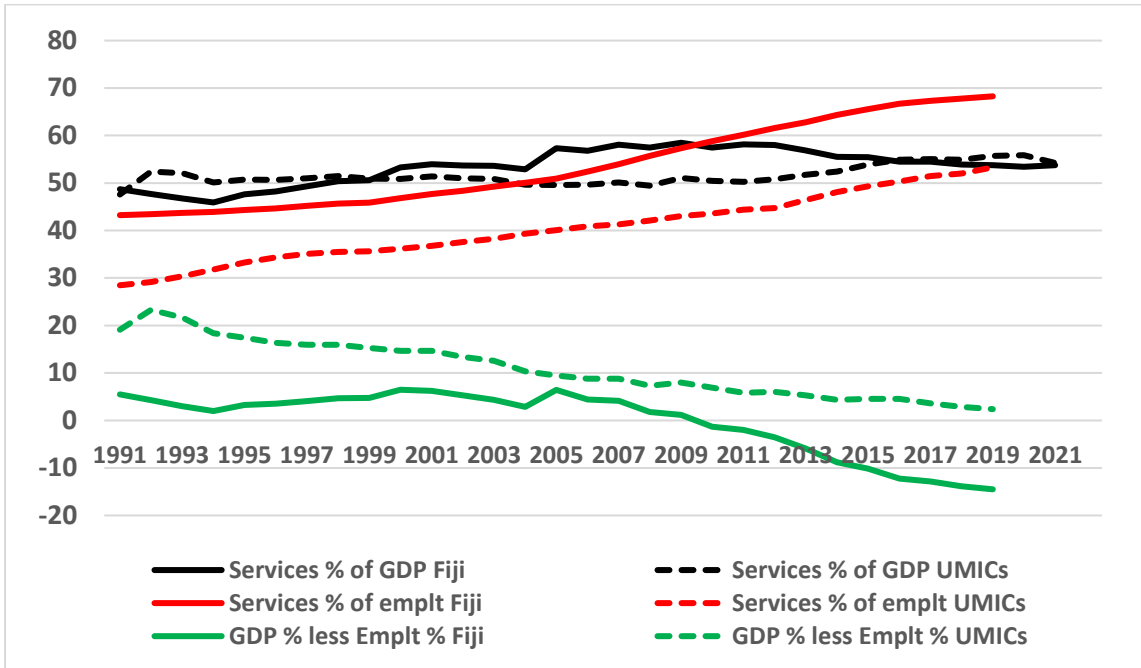
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Figure 1: Shares of GDP and employment in agriculture and in services, and their difference, Fiji and all upper-middle-income countries (UMICs), 1991 to 2021 (%)
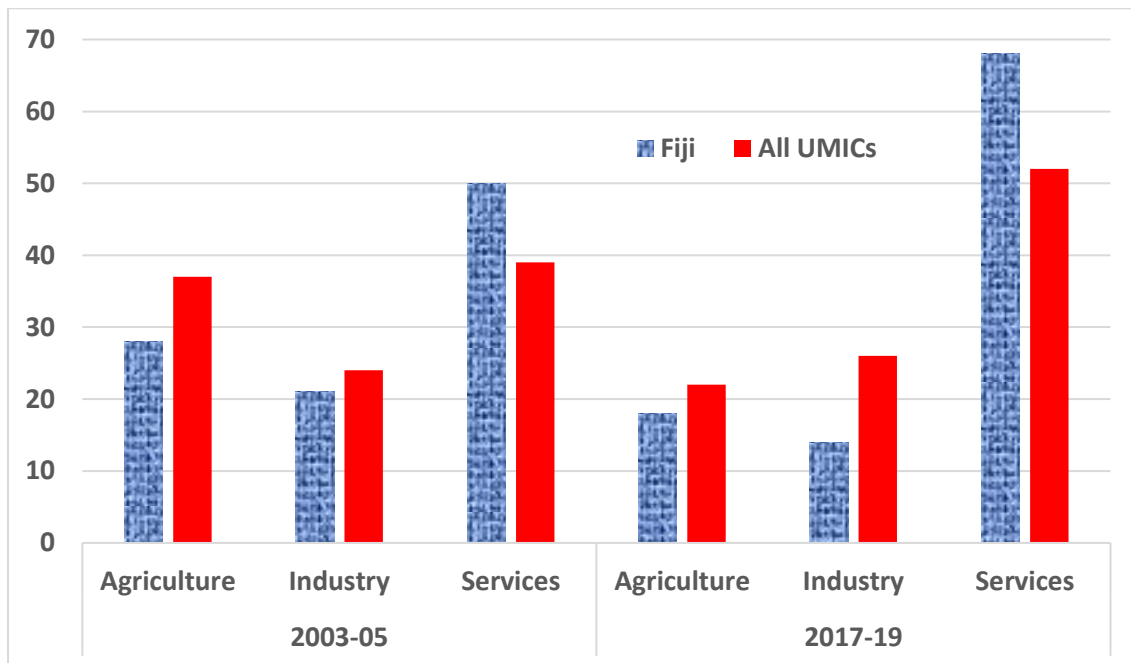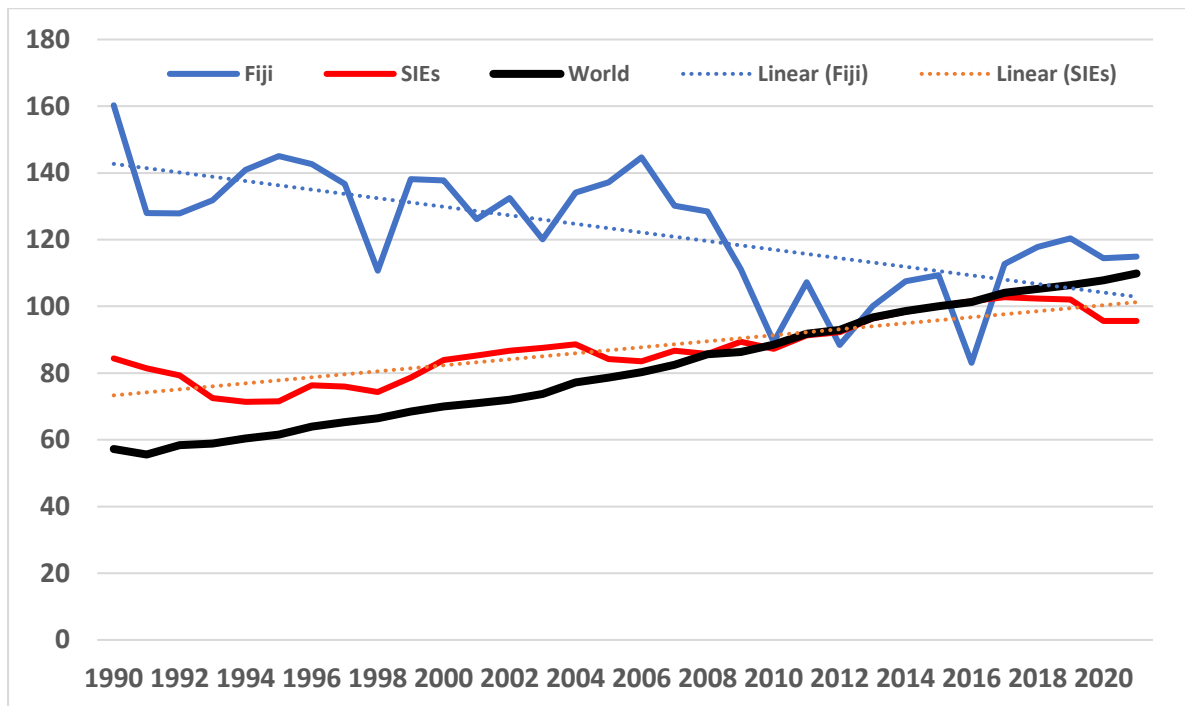
(a) Agriculture
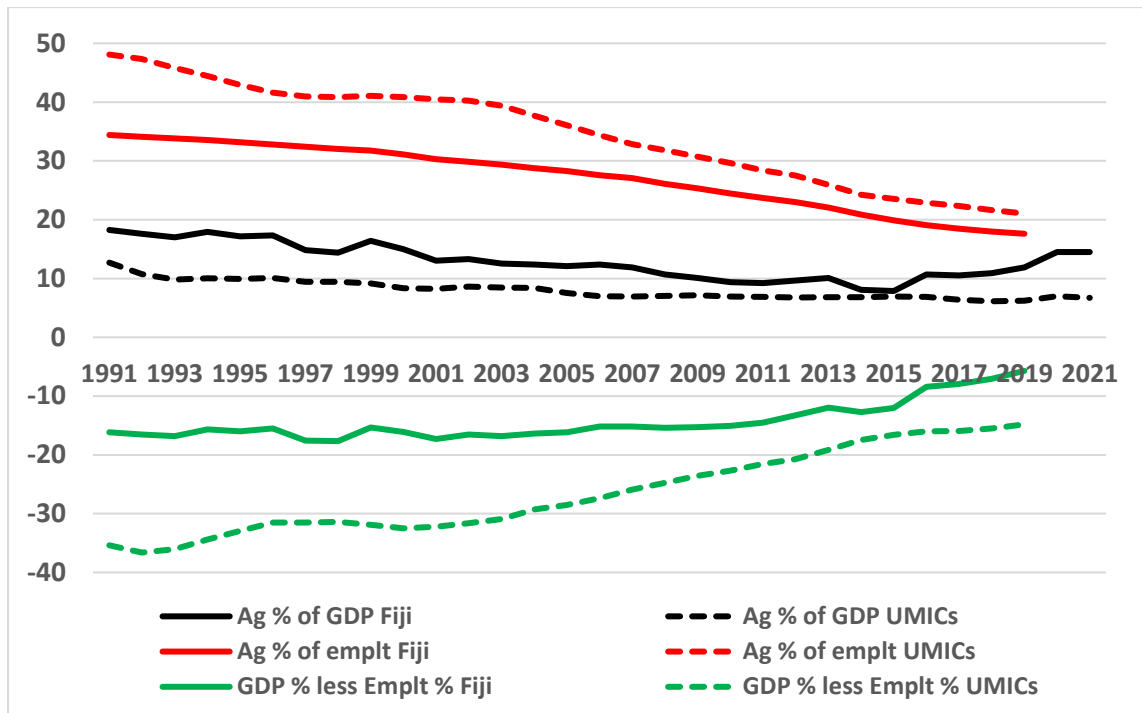
(b) Services

Source: World Bank (2023a).

Figure 2: Sectoral shares of employment, Fiji and all upper-middle-income countries, 2003-05 and 2017-19 (%)
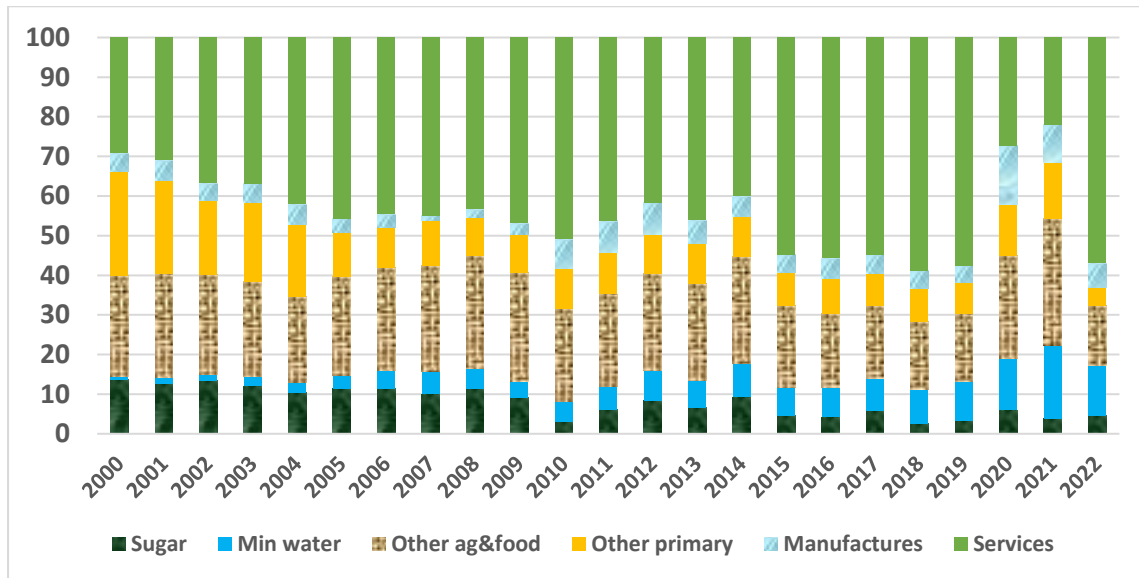

Source: World Bank (2023a).

Figure 3: Index of agricultural production, Fiji and all small island developing countries, 1990 to 2021 (2014-16 = 100)
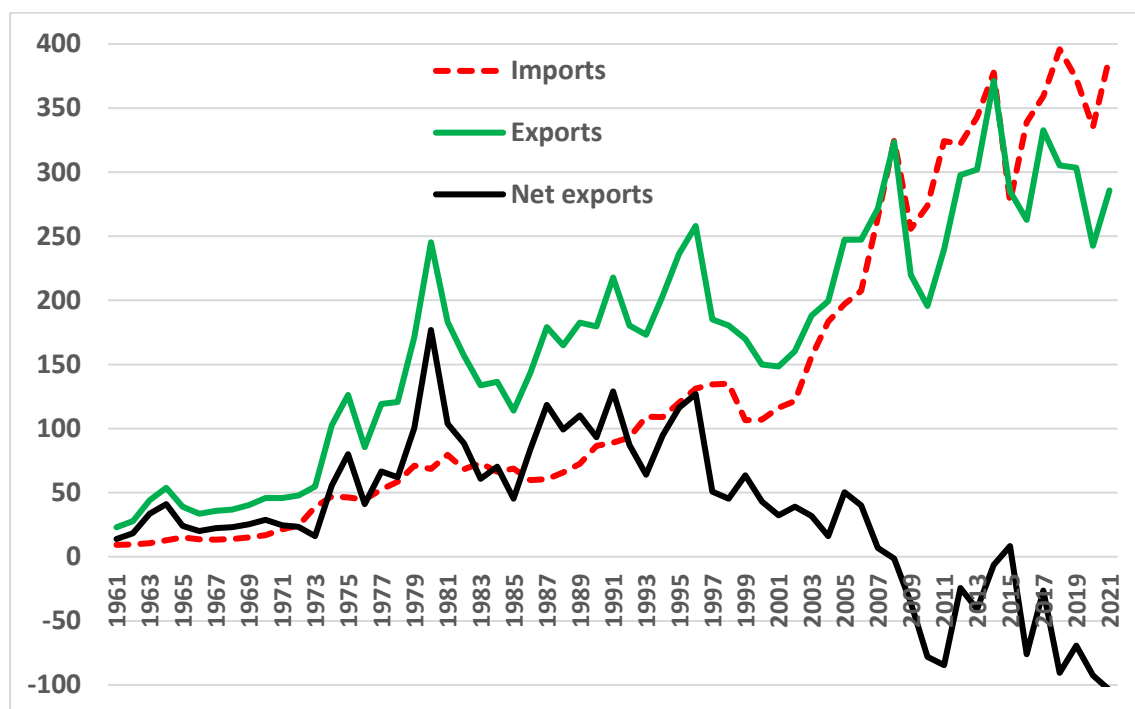

Source: FAO (2023).

Figure 4: Sectoral shares of total domestic merchandise and services exports, Fiji, 2000 to 2022 (%)
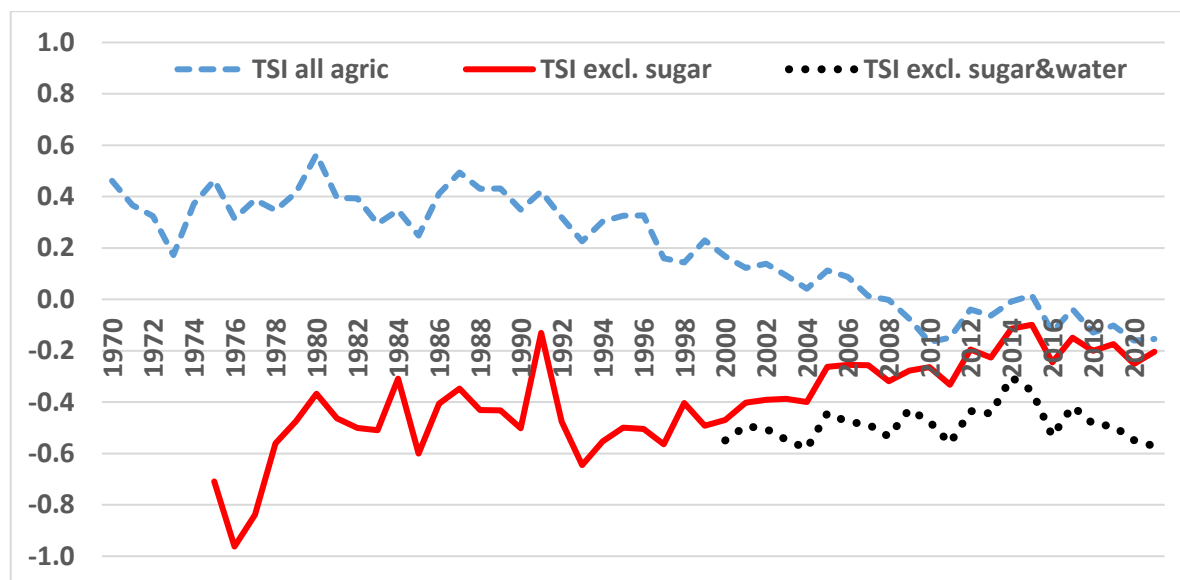

Source: FBS (2023).

Figure 5: Agricultural exports and imports, Fiji, 1961 to 2021 (current US$ million)

(a) Value of agricultural exports, imports and net exports, US$m


(b) Agricultural trade specialization indexes[a]

[a] TSI is defined as net exports divided by the sum of exports and imports, (X-M)/(X+M). 'TSI excl. sugar' is the index for non-sugar agriculture; 'TSI excl. sugar&water' is the index for non-sugar agriculture excluding also mineral water. By definition, each TSI must range between -1 and +1.
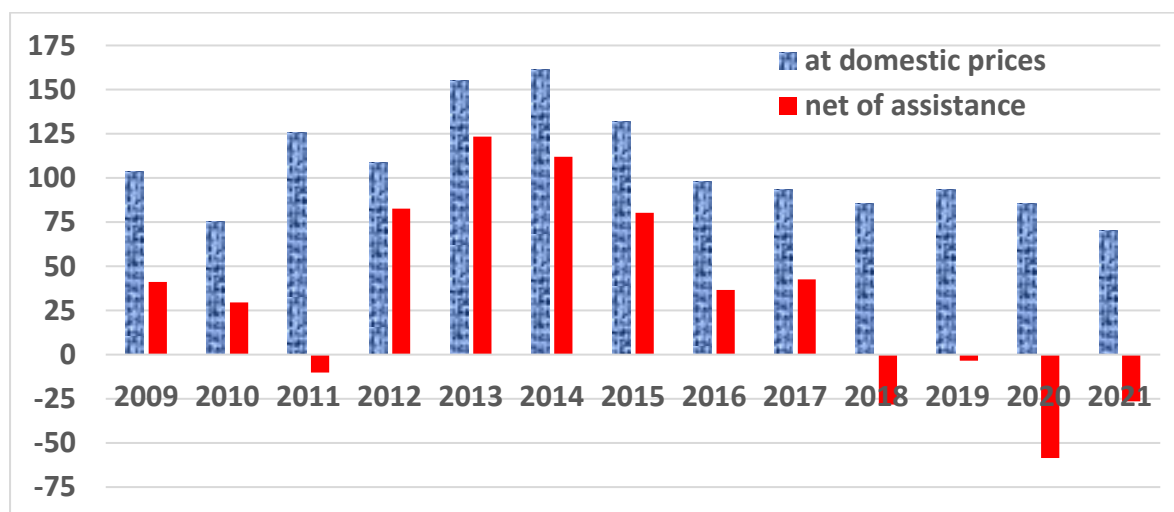
Source: FAO (2023) and FBS (2023).

Figure 6: Estimated value added in Fiji's poultry and sugar industries at domestic and international prices,[a] 2009 to 2021 (F$ million)

(a) Poultry raising and processing
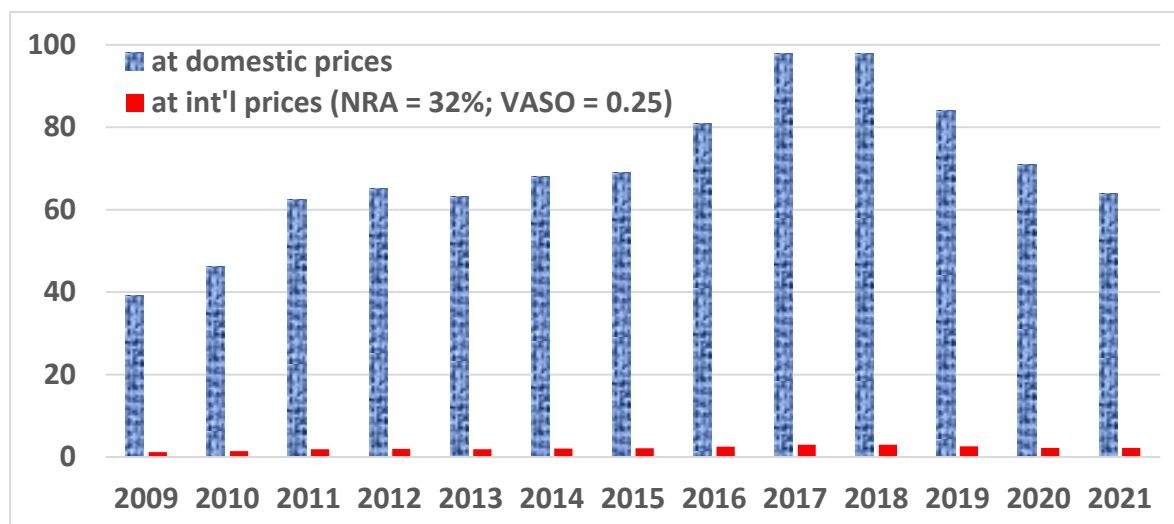
(b) Sugar cane growing and milling

[a] Author's estimate assuming the domestic price of chicken exceeds the international price at the border by 32% (which is the applied tariff on imports, ignoring any non-tariff import barriers such as quarantine regulations) and the value-added share of output at domestic prices (VASO) is 0.25. (According to FBS (2022b, 2022c), in 2019 VASO for raising and breeding broilers was 0.264 and for processing them was 0.157, so the combined share is 0.225 at domestic prices that year. It may have been higher in the earlier learning-by-doing

years, hence the average assumed value in this study of 0.25.) For sugar cane growing and milling, see Anderson (2023): over those 13 years, average NRA = 43% and VASO = 0.62.

Sources: FBS (2022b, 2022c and 2023) for nominal values at domestic prices of poultry, and Anderson (2023) for sugar.

Table 1: Indexes of 'revealed' comparative advantage,[a] by sector, Fiji, 1980 to 2020

	Sugar	Non-sugar agriculture	Non-sugar+water agriculture	All agriculture	Manuf-acturing	Tourism	Other services	All services
1980-84	258	0.9	0.9	3.1	0.0			2.1
1985-89	337	0.8	0.8	2.8	0.1			2.1
1990-94	252	0.9	0.9	2.3	0.3			2.4
1995-99	227	0.9	0.9	2.1	0.4	4.0	1.5	2.3
2000-04	253	1.6	1.2	2.3	0.4	5.2	0.9	2.3
2005-09	201	3.1	1.9	2.4	0.2	7.5	0.7	2.7
2010-14	85	2.6	1.5	1.7	0.2	6.9	0.7	2.5
2015-19	71	3.1	1.6	1.6	0.2	6.9	0.6	2.5
2020	65	2.6	1.3	2.3				1.3

[a] RCA index is defined by Balassa (1965) as the share of sector in all goods and services exports for country i divided by that share for the world.

Source: Computed from data in FBS (2023a) World Bank (2023a).

Table 2: Industry self-sufficiency ratios,[a] nominal rates of assistance (NRA),[b] and shares of gross value of farm production and of value added, by trade status, Fiji, 2021 (%)

	% SSR[a]	% NRA[b]	% GVP at domestic prices	% VA at domestic prices	% VA at int'l prices
Exporting industries:	**2017-21**	**2021**	**2021**	**2021**	**2021**
Yaqona	>100	0	35.6	39.6	48.0
Sugar (growing+milling)	435	43	7.2	5.4	0.0
Taro	114	0	8.1	7.4	9.0
Eggs	105	0	2.6	0.5	0.6
Cassava	101	0	4.0	3.7	4.5
Coconut (incl. copra)	>100	3	2.2	2.3	2.5
Ginger	108	0	1.3	0.8	1.0
All exporting,			**61.0**	**59.7**	**65.6**
weighted average[c]		**9**			
Import-competing:					
Chicken	90	32	16.6	4.9	0.2
Pork	84	32	2.5	0.6	0.1
Beef	51	15	1.3	1.5	0.4
Milk	53	32	0.7	3.1	0.4
Rice (growing+milling)	16	15	0.5	1.1	0.7
Maize	<10	5	0.2	0.1	0.1
All import-competing,			**21.8**	**11.3**	**1.9**
weighted average[c]		**30**			
Non-traded industries:					
Pineapple	100	0	0.8	0.8	0.9
Sweet potato	100	0	1.0	0.9	1.1
All other farm products (incl. subsistence)	100	0	17.2	29.0	32.5

Memo: All livestock[c]	*25*	*23.7*	*10.1*	*1.1*
ALL AGRICULTURE,		100	100	100
weighted average[c]	14			

[a] Self-sufficiency is the percentage by which the domestic production volume exceeds the domestic consumption volume.

[b] The nominal rate of assistance is the ad valorem import tariff rate, except for sugar and coconut whose estimates are based on the value of domestic producer subsidies. Copra, which contributes no more than 8% to the gross value of coconut plus copra output (FBS 2022b), received F$0.9 million in deficiency payments in 2021 and F$1.2 million in 2022.

[c] Sub-sectoral average NRAs in column 2 are estimated using agricultural production valued at international prices as weights (shown above in column 5).

Sources: Ministry of Agriculture (2022); FBS (2023); FRCS (2023) for applied MFN tariffs; Anderson (2023) for sugar.