

### 13. Donors

External assistance is less important in Fiji than in other South Pacific island economies, accounting for only 3–4% of GDP. In terms of natural disasters, donor efforts have primarily focussed on preparedness and response rather than mitigation. This paper does not attempt to provide a comprehensive account of donor disaster-related activities. Instead, it merely aims to impart a flavour of this external assistance on the premise that donor behaviour provides an indication of the international community's perception of the physical, economic and social risks imposed by natural disasters and is thus worthy of a brief examination in a study on the scale of their economic impacts. The degree of concessionality of foreign assistance, particularly for relief purposes, is also considered.

Disaster relief can only be provided in response to an official appeal.<sup>57</sup> Many donors provide relief in the aftermath of disasters although the Australian, French, New Zealand and Japanese governments play particularly large roles, reflecting their existing disaster response capacity in the South Pacific more generally. In 1973, the South Pacific Forum Secretariat also established a Regional Disaster Fund which can provide disaster funds up to a maximum value of F\$20,000 to any member country. Since 1977, this Fund has also been available for use in disaster preparedness.

Donor relief assistance is largely funded out of emergency budgets, rather than entailing the diversion of development assistance, and normally provided as grant aid. Some development project funds may be used to finance the repair of damaged infrastructure which is directly relevant to a project's success but it would be very difficult to assess the extent to which this occurs or the implications for the overall achievements of the project.<sup>58</sup> Meanwhile, AusAid, at least, will meet a larger share of the local costs of development projects in the aftermath of a disaster in recognition of the increasing financial demands which the disaster places upon the government. However, some disaster reconstruction activities have been funded by loans rather than grants, with longer-term debt implications. For example, the World Bank extended a US\$18m loan for the reconstruction of roads, bridges and drainage works and for the dredging of several rivers in the wake of Cyclone Wally (1980), which had caused numerous landslides and severe flooding in the Navua and Waimanu river

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<sup>57</sup> Sometimes, appeals are made to specific countries rather than issued more generally (NDMC, 1995).

<sup>58</sup> For example, funding for an education project could be used to repair a school.

catchments. Some of the work completed under the project was subsequently damaged by Cyclone Oscar (1983) although the loan still had to be repaid in full.<sup>59</sup>

In a perhaps slightly unusual case, one cyclone offered the opportunity to utilise allocated, but as yet unspent, development funds. Flooding associated with Cyclone Kina (1993) destroyed four bridges in Viti Levu, including the two most important ones (Ba and Sigatoka). The EU financed their reconstruction, incorporating cyclone- and earthquake-proofing features into the new structures and also widening one of the bridges from a single to double lane, in recognition of the gradual increase in use of the bridge which had occurred since its original construction. Existing development funding to the value of 10.2m ECU (US\$12.0m) was allocated to the bridges, representing almost half of the total 22m ECU available under the EU's Seventh Indicative Programme (1990-5) of the European Development Fund (EDF). The EU had previously faced certain absorption problems disbursing this funding, although such problems had not been experienced by most other donors.

In terms of preparedness, several bilateral and multilateral donors, including Australia, Japan, New Zealand and the World Meteorological Office, have supported the country's meteorological services at various times, including its cyclone warning capacity. As already noted, these services cover not only Fiji but much of the South Pacific as well. New Zealand also offers back-up cyclone tracking services from Wellington. More recently, in the wake of Cyclone Kina (1993) the EU has begun a 1.96m ECU (US\$2.3m) project to upgrade cyclone warning systems in the Pacific, including installation of equipment on isolated islands to provide a first line of warning and a component to improve the translation of technical warnings into public ones. The EU is also considering a risk assessment project for the Pacific. Australia has been particularly active in non-technical disaster preparedness activities, funding workshops and seminars as well as providing financial support for the publication of the 1995 *National Disaster Management Plan*. A number of donors, including the United Nations Department of Humanitarian Affairs (UNDHA)'s South Pacific Programme Office (see Box 13.1), have also been involved in disaster training, either directly or indirectly.

In contrast, donor support of disaster mitigation activities is relatively new with the notable exception of the South Pacific Disaster Reduction Programme (see Box 13.1) and Australia's support of the development of Fiji's Building Code. As of early 1996, Japan was undertaking preliminary studies for the establishment of a watershed management project. However, some development projects include disaster

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<sup>59</sup> This study does not consider the sourcing of post-disaster relief supplies and the extent to which local materials are drawn upon, where available. However, evidence suggests that on some occasions the scope for domestic sourcing was not fully exploited. For example, much of the emergency rations provided in the aftermath of Cyclones Eric and Nigel were imported (Chung, 1988).

**Box 13.1      The South Pacific Disaster Reduction Programme**

The South Pacific Disaster Reduction Programme (SPDRP) is a regional programme covering the 15 Pacific island countries which has been in operation since 1990. The programme represents a major regional initiative to systemise and rationalise the management of disasters, particularly from the perspective of disaster mitigation and preparedness. It is implemented by UNDHA through its South Pacific Programme Office, with financial support from a number of multilateral and bilateral donors.

The SPDRP's objectives include to 'improve the capacity of countries to mitigate, prepare for and respond to natural disasters through institutional strengthening and community based disaster management programmes' as well as to provide technical support and training and to promote cooperation between governments, donors and others involved in various aspects of disaster management (UNDHA, 1996: 1). Disaster mitigation forms one of the SPDRP's six project components and several disaster mitigation projects have been developed under this component of the project. These include the Suva Earthquake Risks Management Programme, a programme incorporating housing vulnerability reduction, land-use planning, emergency planning, public awareness and public sector services. Other SPDRP initiatives in Fiji include production of the *National Disaster Management Plan*, the undertaking of an assessment of drought problems and a pilot mitigation project.

The SPDRP clearly recognises the links between the reduction of disaster threats and sustainable development. Indeed, its mid-term review proposed the establishment of a programme 'that assists countries to reexamine and fine-tune their development programmes, and identifies disaster mitigation policies, strategies and measures that improve the sustainability of development programmes by taking relevant counter-disaster measures' (UNDHA, 1996: 9-10). It also proposed that the SPDRP should 'stimulate countries to feed disaster mitigation programmes into their national prioritization arrangements' (UNDHA, 1996: 13). If successful, such efforts could constitute a major step in mitigating the economic impacts of natural disasters at both the household and broader macroeconomic level.

mitigation elements. For example, most donors apparently include disaster-proofing measures in the construction of any buildings, a measure effectively reinforced by the fact that the Public Works Department will not take on the maintenance of any building which has not been cyclone-proofed. However, it is less clear whether earthquake-proofing measures are also included in the design of buildings. More generally, although many donors now undertake Environmental Impact Assessments as part of the feasibility studies for at least some projects, they do not undertake hazard risk assessments except in cases where high risks are already transparent. For example, the New Zealand government apparently considered the risk of disasters in providing support to the forestry sector, where the risks of cyclones and fires are well-recognised. Meanwhile, although a number of Fiji's larger donors, including Australia, New Zealand and multilaterals such as UNDP, have recently begun to place an increasing emphasis on human resources development, including anti-poverty

strategies, there are no projects specifically aimed at reducing the disaster vulnerability of individual households.

## 14. Conclusions

The main findings of the paper are as follows:

- Severe natural disasters constitute major exogenous shocks to the **Fijian economy**, resulting in substantial declines in GDP. The economic impacts of disasters may be exacerbated during periods of more fundamental underlying weakness, underscoring the need to recognise and address any longer-term problems rather than attribute difficulties to natural disasters.
- The **agricultural sector** has become increasingly vulnerable to natural disasters since the early 1980s. In terms of individual crops, the vulnerability of the country's important sugar crop has increased as production has expanded onto marginal lands, encouraged by artificially high export prices which have perpetuated the economy's reliance on a highly-disaster vulnerable industry. Coconuts, an important cash crop in the Eastern Islands and much of the Northern Division, have also become increasingly vulnerable to cyclones between the 1970s and 1980s, probably partly reflecting the increasing senility of trees. However, rootcrops remain relatively immune to the impacts of both cyclones and droughts.
- Current changes in the agricultural sector suggest that the sector's vulnerability to natural disasters is unlikely to decline in the medium term, despite an anticipated decline in sugar production. Instead, farmers are diversifying into other disaster-vulnerable crops such as fruit, vegetables and flowers, with little apparent consideration, at least on the part of government, for the consequences of potential natural hazards. Increased expansion into marginal areas and environmental degradation could also exacerbate the sector's hazard vulnerability. However, rising vulnerability is not inevitable. For example, winter crops grown under irrigated conditions and, by definition, outside the cyclone season, are less susceptible to natural disasters while early maturing perennial winter crops could offer particular benefits in terms of lower vulnerability to natural disasters. Increased cultivation of traditional roots and tubers could also play an important role in reducing hazard vulnerability both of households and, as export markets are built up in response to growing overseas demand for such crops, the broader macroeconomy.
- Since the mid-1980s, the **forestry industry** has been expected to shortly emerge as one of country's major growth sectors. Pine exports, in particular, have been forecast to eventually compete with sugar as the country's prime export. However, in practice, Fiji Pine, at least, has consistently under-performed in meeting both plantation and timber production targets, largely as a consequence of natural disasters. Between 1983 and 1994, forest damage as a result of cyclones and fires,

in turn part drought-related, totalled over F\$34.2m (at 1994 prices) compared with gross profits over the same period of F\$32.4m.

- As with the agricultural sector, the **manufacturing sector** has become increasingly vulnerable to natural disasters since the early 1980s, principally reflecting the increased vulnerability of the sugar industry. However, sugar's importance in total manufacturing output has declined since the late 1980s due to the growth of various (less disaster-vulnerable) industries. If this trend continues, the sector's overall vulnerability to natural disasters could decline although this trend would not represent the result of any deliberate policy on the part of the government.
- Levels of **investment** have been consistently low despite its particular importance in securing future growth. However, natural disasters do not appear to have acted a constraining factor. There is little evidence of any post-disaster construction booms linked to the construction industry.
- The overall **balance of payments** has been relatively immune to natural disasters, primarily reflecting higher reinsurance inflows and the export of sugar reserves during disaster years, both of which have helped maintain foreign exchange earnings. However, the current pattern of diversification in the agricultural sector together with anticipated future declines in sugar production, in turn implying lower sugar reserves, could render the balance of payments increasingly vulnerable to natural disasters. The projected increase in timber and wood product exports could also contribute to this trend.
- The **tourist industry** has apparently been relatively immune to natural disasters to date, at least as reflected in annual data. Further development of the sector therefore offers some opportunity to reduce the economy's vulnerability to disasters. However, any upper limits imposed by natural disasters on the potential extent of expansion of the industry, from the perspective of both potential investors and visitors, should be investigated. Efforts should also be undertaken to ensure that tourists are adequately protected in the event of a disaster, in part to avoid any damaging publicity
- Natural disasters appear to have had little **inflationary impact** but there is some evidence that they may result in more permanent price increases for certain domestically-produced food items.
- Severe disasters can have potentially profound **budgetary implications** although it is typically difficult to ascertain much impact from overall annual expenditure data. This partly reflects the fact that the government has limited their net impact by redeploying allocated resources to meet disaster relief and rehabilitation needs,

despite partly thwarting efforts to increase the ratio of capital to operating expenditure as a consequence. Disasters have also had an adverse impact on certain categories of government revenue whilst recent tax changes, including a relative shift away from import duties, may have increased the vulnerability of the tax base to natural disasters.

- Businesses and households should continue to be encouraged to take out **insurance** policies to help spread the cost of natural disasters and ensure a speedy recovery. Efforts should also be undertaken to ensure that insurance risks are not under-assessed and thus that insurers and reinsurers do not incur substantial losses, either driving away potential reinsurers or increasing premiums to such an extent that there is a large decline in insurance coverage. High levels of reinsurance coverage are particularly important in ensuring the continued flow of substantial foreign exchange earnings in the aftermath of natural disasters, thus helping to prevent major balance-of-payments crises. Fiji is widely quoted as a successful example of a country which has used the insurance industry to promote improved building standards. Although this claim may be marginally premature, the insurance industry should continue to be used to encourage improved building standards.
- Considerable attention has been paid to **disaster management**, but efforts have concentrated largely on preparedness, post-disaster response and specific disaster mitigation and preparedness projects whilst broader strategies to mitigate the economic impacts of natural disasters have been largely neglected. Similarly, hazard risks have not been incorporated into overall **economic policies**. Preparedness and disaster response measures are clearly very important and efforts should certainly be continued to improve them even further. However, more attention also needs to be paid to disaster prevention and mitigation.
- Fiji requires a comprehensive **water strategy**, identifying water resources and appropriate techniques to exploit those resources on a systematic, national basis and covering all aspects of water usage. Such a strategy should include the introduction of marginal cost pricing of water.
- At the **community and household level**, there has been a gradual breakdown in traditional mitigation and coping mechanisms and the apparently simultaneous emergence of a relief-dependency syndrome, with communities increasingly **reliant** on outside help in the aftermath of a disaster. Various factors have contributed to the disintegration in coping mechanisms including changing agricultural practices; increasing poverty; population and land pressures, expansion of the market economy and financial services; changing types of housing; and the breakdown of the extended family system. Poverty and disaster vulnerability appear to be mutually self-reinforcing but little research has been

undertaken on the economic impact of disasters at the household level, either in Fiji or elsewhere in the Pacific. Such studies should form a fundamental component of preliminary investigations to design anti-poverty strategies.

- **The risk of a major earthquake**, which could cause extensive economic damage, appears to have been largely discounted although an earthquake risk mapping pilot survey is currently being conducted which could increase risk awareness. All potential investors should be encouraged to undertake full disaster risk assessments before deciding on the location of manufacturing plants. The extent of insurance cover against earthquakes should also be ascertained and such policies promoted where possible.

The evidence presented in this paper indicates that the structure of the Fijian economy, including the importance of the sugar industry, has effectively helped mitigate some of the potentially more serious economic impacts of natural disasters, particularly on the balance of payments. However, this should not engender complacency. Indeed, it is conceivable that the adverse economic, and perhaps even the social, impacts of disasters could increase in the future if government policy-makers and others do not undertake appropriate counteracting measures.

The favourable sugar price environment which Fiji has enjoyed for many years is expected to be partially eroded up to the year 2001 as agricultural support and protection is gradually reduced in accordance with the Uruguay Round of the GATT Agreement, in turn precipitating the diversification out of sugar production in Fiji. This is therefore a particularly opportune moment to develop a detailed strategy both for the agricultural sector and the economy more generally which aims to reduce hazard vulnerability as well as to address other major economic concerns – namely (as specified by the World Bank, 1995), the restoration of economic growth to a level sufficient to provide jobs for the expanding labour force and to improve standards of living; diversification of the economy to reduce vulnerability to volatile export markets and take advantage of new export opportunities; and the creation of a domestic environment which encourages investment in human and physical capital.

The World Bank (1991) has advocated a development strategy for the Pacific Islands which focuses on areas of comparative advantage in each country. In practice, it is often difficult to identify such sectors because the Pacific islands face substantial import and export transportation costs, forcing up the price of exports and the domestic cost of living, as reflected by unskilled wage levels some 3–7 times higher than those for comparable workers in Southeast Asia (ADB, 1995). However, Fiji is favoured by a good natural resource base, including tourism potential and, of the Pacific islands, is considered to have one of the best chances of achieving improvements in standard of living and greater self-reliance (Ibid.). Given the high transport costs, it is also widely held that some of the strongest opportunities for growth of the



manufacturing sector must lie in industries based on domestic natural resources. A 1996 ADB agricultural review of the Pacific therefore included efforts to strengthen linkages between the agriculture and manufacturing/processing sectors as one of its main areas of concern. However, such a strategy could imply increased vulnerability to natural disasters by implying increasing dependence on potentially the most disaster-vulnerable sector of the economy. It is therefore essential that hazard risks are assessed as part of the multi-sectoral strategic planning process and that a strategy is adopted which aims to minimise risks from all potential sources, including natural hazards as well as, for example, adverse commodity price shocks. Although increased emphasis has been placed on the integration of sectoral policies into the government's overall strategy since the late 1980s, hazard risk assessments have yet to be undertaken at either the sectoral level or for the overall economy.

### ***Appendix 1 Quantitative regression analysis of the impact of natural disasters on GDP***

The sensitivity of sectoral economic performance to natural disasters over the period 1971–94 was examined quantitatively for the purpose of this study using ordinary least squares regression analysis and focussing specifically on the impact of cyclones and droughts.

The country's major productive economic activities are located on Fiji's two main islands, Viti Levu and Vanua Levu. A cyclone series was therefore constructed assigning values of 0 for years in which no cyclone occurred; one for years of either moderate cyclones or severe ones which did not affect major parts of the two main islands; and 2 for years when severe cyclones affected large parts of the main islands (see Appendix Table 1). Cyclones which occurred between September and December were taken into account in the cyclone dummy variable for the following, rather than current, calendar year as their effects were largely expected to be felt at the point of harvest. A drought dummy variable was also constructed with values of 1 in years of severe drought affecting large parts of the country and 0 in others.<sup>60</sup> A disaster dummy variable combining cyclones and droughts in one series and a coup dummy variable were also constructed. The latter was assigned values of 2 in 1987, 1 in 1988 and 0 in other years.

Preliminary examination of Fijian sectoral GDP data indicated an apparent slowdown in the average economic growth rate over the period of analysis. Growth rates averaged 4.4% per annum for the period 1971–82 compared with 2.2% for 1982–94. The difference in growth rates was confirmed by Chow (analysis of variance) tests on regressions of sectoral GDP and GDP at factor cost against time for the two periods. In analysing the impact of natural disasters on growth rates, separate regressions were therefore run for the periods 1972–82 and 1982–4 as well as for the full period 1972–94.<sup>61</sup>

Regressions were undertaken on annual growth rates of sectoral GDP at factor cost. More specifically, separate regressions were run for agricultural, manufacturing, industrial, services and non-agricultural output as well as for overall GDP against the various dummies. For the later period, 1982–94, data were also available on the value

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<sup>60</sup> Floods were not considered as severe flooding typically occurs in the context of a cyclone. As the country has not experienced a major earthquake since 1953, earthquakes were also excluded from the analysis.

<sup>61</sup> It should be noted that the results of any analysis are partly dependent upon the choice of base and end years. The base and end years used here were partly chosen because they were "normal" (ie, non-disaster) years.

of sugar production in agricultural and manufacturing value-added. Separate regressions were therefore run for these as well as for agricultural and manufacturing output excluding sugar.

The highest overall levels of explanatory power (as measured by the adjusted  $R^2$ ) were generally obtained for regressions against the combined cyclone/drought and coup dummies. The results confirm that both the manufacturing and agricultural sectors as well as overall GDP have become increasingly vulnerable to natural disasters since the early 1980s (see Appendix Table 2). Regressions for the later period, 1982–94, excluding sugar in agricultural and manufacturing production indicate that the sugar industry is responsible for the increasing vulnerability of the manufacturing sector but that sugar alone cannot explain the increasing vulnerability of the agricultural sector (see Appendix Table 3).

The explanatory power of the cyclone dummy lagged one year was also examined to see if cyclones created a prolonged economic downturn or, alternatively, whether disasters led to mini-boom conditions in the following year. However, results were generally insignificant.

Appendix Table 1: Cyclone, drought and coup dummy variable series constructed for the purposes of the regression analysis

Year*	Typhoon dummy	Drought dummy	Coup dummy	Notes
1970	0	0	0	
1971	0	0	0	
1972	0	0	0	
1973	2	0	0	Beba (severe, Viti Levu incl. Suva & west coast)
1974	1	0	0	Lofilo (severe; small islands in extreme south-east)
1975	1	0	0	Vai (severe, south-east smaller islands), Betty (moderate, western half Kandavu & v. far south Fiji area, gale force winds in SW Viti Levu incl. Nandi)
1976	0	0	0	
1977	0	0	0	
1978	1	1	0	Anno (moderate; in eastern small islands), Bob (moderate; western side of Viti Levu), drought 1977/8
1979	1	0	0	Meli (severe; far south islands)
1980	1	0	0	Wally (severe, far southern corner of Viti Levu and islands further south)
1981	2	0	0	Arthur (severe, severe over west including western third of Viti Levu, storm winds in rest of Viti Levu)
1982	0	0	0	
1983	2	1	0	Oscar (severe, severe in south-west Viti Levu, storm force over western half Viti Levu), drought 1982/3
1984	0	0	0	
1985	2	0	0	Eric (severe, severe over much of Viti Levu except extreme north), Nigel (moderate; moderate over small coastal region of Viti Levu plus north-west islands), Hina (moderate; severe over south-east corner of Viti Levu incl. Nadi); storm force winds over western third Viti Levu)
1986	0	0	0	
1987	1	1	2	Martin (severe, north-east of Fiji area including narrow strip of north-eastern Vanua Levu) drought 1986/7
1988	1	0	1	Raja (severe; north-eastern extremity of Vanua Levu and islands in strip in south-easterly direction from here)
1989	0	0	0	
1990	0	0	0	
1991	1	0	0	Sina (moderate; Viti Levu, especially west)
1992	0	1	0	Drought 1991/2
1993	2	0	0	Joni (moderate, worst in Manamaca's and Yasawa's; high winds in parts of Viti Levu), Kina (very severe, severe in north-western and eastern Viti Levu as well as Yasawa's and Lau group)
1994	0	0	0	
1995	0	0	0	

\* Cyclone seasons (1970 - October 1969 to September 1970 etc.)

Appendix Table 2 Fiji - Results of regressions to examine the relationship between sectoral growth performance and natural disasters

Dependent variable	Regression Period	Constant	Typhoon & drought dummy	Coup dummy	Dependent variable lagged 1 period	DW	F	Adjusted R2
GDP	1972-82	4.571	1.451 (0.731)		-0.278 (-0.781)	1.834	0.55	0.000
	1982-94	6.753	-3.486 (-3.538) **	-2.155 (-1.283)	-0.342 (-1.958)	1.696	8.17 **	0.642
	1972-94	6.536	-1.916 (-1.731)	-3.835 (-1.714) *	-0.234 (-1.248)	1.840	3.18	0.229
Agriculture	1982-82	5.727	0.235 (0.080)		-0.478 (-1.858)	1.850	1.38	0.070
	1982-94	8.194	-6.697 (-4.235)	1.293 (0.378)	-0.500 (-2.922)	2.003	10.29 **	0.699
	1972-94	8.356	-3.958 (-2.082)	-0.749 (-0.201)	-0.531 (-3.212)	2.004	7.47 *	0.469
Industry	1982-82	3.671	1.358 (0.433)		-0.305 (-0.785)	1.783	0.31	0.000
	1982-94	5.940	-4.455 (-2.728)	-4.527 (-1.594)	-0.292 (-1.468)	1.344	5.72	0.541
	1972-94	6.310	-2.933 (-1.861) *	-6.495 (-2.069)	-0.153 (0.822)	1.886	3.87	0.281
Manufacturing	1982-82	5.754	0.836 (0.312)		-0.364 (-1.267)	1.884	0.85	0.000
	1982-94	9.929	-6.071 (-3.878) **	-2.109 (-0.773)	-0.452 (-2.932)	2.052	12.11 **	0.735
	1972-94	9.508	-3.889 (-2.468) *	-4.331 (-1.358)	-0.399 (-2.534)	2.117	6.99 **	0.450
Services	1982-82	-1.004	2.476 (1.451)		0.572 (2.593)	2.280	4.08 *	0.361
	1982-94	4.704	-1.202 (-0.962)	-2.244 (-1.059)	-0.003 (0.011)	1.402	1.01	0.003
	1972-94	2.472	0.172 (0.160)	-2.349 (-1.070)	0.388 (2.173)	1.848	2.46	0.166
Non-agricultural G	1982-82	1.312	1.566 (0.756)		0.323 (0.975)	2.049	0.81	0.168
	1982-94	5.483	-2.175 (-1.852) *	-2.968 (-1.472)	0.251 (0.640)	1.271	2.58	0.283
	1972-84	4.463	-0.923 (-0.834)	-3.753 (-1.850)	0.140 (0.718)	1.786	1.82	0.101

Notes: T-statistics are given in parentheses. T-statistics and F-statistics which are statistically significant at the 5% level of significance are indicated by \* and at the 1% level of significance by \*\* (using one-tailed t-tests for dummy variables and two-tailed t-tests for dependent variables lagged one period).

Appendix Table 3: Fiji - Results of regressions to examine the relationship between sectoral growth performance and natural disasters

Dependent variable	Regression Period	Constant	Typhoon & drought dummy	Coup dummy	Dependent variable lagged 1 period	DW	F	Adjusted R <sup>2</sup>
GDP	1982-94	6.753	-3.498 (-3.589) **	-2.155 (-1.283)	-0.342 (-1.986)	1.696	8.17 **	0.642
GDP excl. sugar	1982-94	6.203	-2.946 (-3.074) **	-2.228 (-1.342)	-0.303 (-1.568)	1.506	5.80 *	0.545
Manufacturing	1982-94	9.929	-6.071 (-3.878) **	-2.109 (-0.773)	-0.452 (-2.932)	2.052	12.11 **	0.735
Manufacturing excl. sugar	1982-94	6.217	-1.116 (-0.591)	-4.457 (-1.425)	-0.072 (-1.369)	2.088	1.88	0.181
Agriculture	1982-94	9.194	-6.697 (-3.239) **	1.293 (0.376)	-0.500 (-2.822)	2.003	10.29 **	0.689
Agriculture excl. sugar cane	1982-94	7.968	-5.012 (-3.448) **	1.538 (0.638)	-0.510 (-3.138) *	2.067	10.83 **	0.711
Sugar	1982-94	21.687	-15.625 (-8.469) *	-0.413 (-0.941)	-0.469 (-2.350) *	1.753	7.07 **	0.603
Sugarcane	1982-94	21.467	-15.458 (-8.592) *	-0.496 (-0.680)	-0.470 (-2.323) *	1.782	7.19 **	0.607

See notes for Appendix Table 2

## ***Appendix 2 Quantitative regression analysis of the impact of natural disasters on the agricultural sector***

The hazard sensitivity of five major food, agro-industrial and export crops – sugar, coconut, roots and tubers, cassava and ginger – was formally examined using ordinary least squares analysis in logarithmic form. Regressions were run over varying time periods, depending on the availability of data,<sup>62</sup> to explore the statistical significance of a current and lagged rainfall series, a current and lagged cyclone dummy and a time series.

Rainfall series were based on available data for selected rainfall stations in the more important growing regions of each crop.<sup>63</sup> Separate series were constructed for the rainy season (November–April) and the dry season (May–October), the latter of which could be significant for crops with longer growing seasons (see section 4.1). The cyclone dummy used in Appendix 1 was adjusted to take account of cyclones in the main growing regions only. Rainfall and cyclone dummy series lagged one year were also included in the analysis to capture the extent to which natural disasters affect both subsequent cropping patterns and yields.

The results of the analysis are presented in section 4.1, as part of the discussion of individual crops. It should be borne in mind that in some cases the results could have been strengthened by the inclusion of additional explanatory variables in the analysis, such as changes in the level of production under irrigation, movements in the cost and availability of agricultural inputs and credit facilities, changes in marketing arrangements or outbreaks of pestilence or disease.

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<sup>62</sup> Analysis of some crops was seriously constrained by data limitations. Annual reports are produced by the Ministry of Agriculture containing several years' data but back issues are difficult to locate. Meanwhile, production and acreage data reported by the FAO are rounded up to the nearest thousand tonnes or hectares, making them of little value in analysing crops produced on only a limited scale.

<sup>63</sup> The most complete rainfall records were available for stations located in coastal areas, presumably reflecting the fact that a large proportion of the population is also located in these areas. Coastal rainfall patterns can vary significantly from those further inland. However, available data for particular areas of the country indicated that fluctuations in rainfall at different (coastal) stations were broadly synchronised and, thus, probably reflected overall rainfall patterns in the hinterland as well rather than highly localised ones.

Appendix Table 4: Fiji Government budget expenditure, revenue and sources of deficit financing (real 1994 F\$m)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>Expenditure</b>												
<b>Actual</b>	n.a.	640.8	612.3	925.9	592.3	625.8	697.7	697.6	732.9	770.7	816.5	804.1
<b>Forecast</b>	n.a.	n.a.	n.a.	n.a.	626.6	621.3	655.5	626.0	663.6	731.5	812.9	832.1
<b>Actual as % forecast</b>	n.a.	n.a.	n.a.	n.a.	94.8	120.1	106.4	111.1	110.4	106.4	100.5	96.6
<b>Operating</b>												
<b>Actual</b>	508.7	547.3	518.5	522.7	516.8	538.3	551.6	584.4	603.6	641.5	686.9	664.0
<b>Forecast</b>	451.0	454.9	529.5	516.3	504.8	451.4	511.4	521.6	536.1	586.5	647.3	678.3
<b>Actual as % forecast</b>	112.8	120.3	97.9	101.3	102.4	119.2	107.8	112.0	112.2	109.4	106.0	97.9
<b>Capital</b>												
<b>External</b>												
<b>Actual</b>	82.4	78.6	79.0	79.2	65.6	78.6	111.6	105.3	118.1	101.3	81.8	88.8
<b>Forecast</b>	102.0	126.2	118.8	123.3	104.6	60.9	106.7	104.6	109.3	112.5	108.7	90.6
<b>Actual as % forecast</b>	80.7	61.3	66.5	63.2	62.7	129.3	102.7	100.7	106.0	90.1	73.2	94.9
<b>Capital loans</b>												
<b>Actual</b>	n.a.	14.9	14.7	24.1	10.1	8.9	34.5	7.9	11.2	10.1	12.4	17.9
<b>Forecast</b>	n.a.	n.a.	n.a.	n.a.	17.3	9.2	35.3	1.9	17.2	10.0	17.6	18.7
<b>Actual as % forecast</b>	n.a.	n.a.	n.a.	n.a.	58.3	97.3	97.6	423.0	65.0	101.1	70.1	95.7
<b>Value-added tax</b>												
<b>External</b>												
<b>Actual</b>	-	-	-	-	-	-	-	-	-	17.8	35.9	33.4
<b>Forecast</b>	-	-	-	-	-	-	-	-	-	22.5	36.6	41.5
<b>Actual as % forecast</b>	-	-	-	-	-	-	-	-	-	79.1	92.0	80.5
<b>Revenue &amp; grants</b>												
<b>Actual</b>	484.8	537.0	519.0	508.4	465.5	518.1	562.8	640.3	531.8	641.9	652.1	697.8
<b>Forecast</b>	468.6	482.0	527.8	528.2	524.5	373.8 <sup>b</sup>	519.3 <sup>b</sup>	540.7	587.1	651.7	678.1	694.9
<b>Actual as % forecast</b>	103.5	109.1	98.7	96.2	88.7	138.6	112.2	119.0	107.6	98.5	96.2	100.4
<b>General</b>												
<b>Actual</b>	468.4	517.7	503.2	490.6	447.6	482.8	560.6	628.1	518.0	627.5	643.8	689.0
<b>Forecast</b>	441.4	469.2	503.8	503.3	506.2	351.0	486.0	519.7	563.3	627.6	685.2	694.5
<b>Actual as % forecast</b>	106.1	110.3	99.9	97.5	88.8	137.5	115.3	120.9	109.7	100.9	96.8	100.7
<b>Capital</b>												
<b>Actual</b>	16.4	19.1	16.3	17.8	17.8	36.3	22.2	15.2	13.8	14.4	8.3	8.8
<b>Forecast</b>	27.2	22.7	24.3	24.9	19.3	7.9	21.9	21.0	23.8	24.0	13.0	10.3
<b>Actual as % forecast</b>	60.2	83.9	67.1	71.2	92.5	445.3	101.7	72.2	58.1	60.0	63.8	85.4



Appendix Table 4: Fiji Government budget expenditure, revenue and sources of deficit financing (real 1984 F\$ m.) (a) (cont'd.)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>Net deficit</b>												
Actual	75.0	66.3	54.2	89.2	90.8	2.4	49.3	-2.3	31.7	73.2	87.2	39.2
Forecast	84.5	81.1	74.8	59.7	64.5	55.0	66.9	32.8	22.5	24.0	55.7	88.9
Actual as % forecast	88.8	72.8	72.4	149.3	140.7	4.3	73.7	-7.7	141.0	306.3	156.5	56.9
<b>Deficit as % of GDP</b>												
Actual	4.4	3.6	2.8	4.8	5.2	0.1	2.4	-0.1	1.5	3.3	3.9	1.7
Forecast	n.a.	5.5	3.9	3.5	3.2	3.3	3.2	1.6	1.0	1.0	2.5	2.9
<b>Net financing</b>												
<b>Overseas (net)</b>												
Actual	-9.3	-8.8	0.4	0.1	19.3	17.2	-6.2	6.4	23.6	15.7	12.0	-8.3
Forecast	n.a.	n.a.	22.4	-7.6	14.0	-26.9	13.7	0.8	11.5	6.2	2.5	-1.8
Actual as % forecast	n.a.	n.a.	2.0	-1.9	137.4	-64.1	-45.1	785.7	204.6	253.4	480.0	461.1
<b>Borrowing</b>												
Actual	19.8	28.6	21.1	24.1	10.4	14.0	41.3	23.8	24.9	12.0	11.8	31.1
Forecast	n.a.	n.a.	47.9	36.5	13.8	60.8	24.4	29.5	18.7	21.6	23.0	25.7
Actual as % forecast	n.a.	n.a.	44.0	66.0	75.2	23.0	169.2	80.6	128.1	55.7	51.1	121.0
<b>Repayment</b>												
Actual	10.5	21.0	21.4	24.2	26.7	31.2	35.1	30.2	48.4	27.7	23.7	22.8
Forecast	n.a.	n.a.	25.5	28.2	27.8	33.9	38.1	30.3	31.2	27.6	23.5	23.9
Actual as % forecast	n.a.	n.a.	83.7	86.0	106.6	92.0	92.0	99.6	155.7	99.6	93.0	95.4
<b>Domestic (net)</b>												
Actual	65.7	57.6	54.6	89.9	110.1	19.6	43.1	4.1	55.2	88.9	98.2	31.0
Forecast	71.2	80.9	52.4	52.1	72.4	28.1	80.7	33.3	33.9	28.2	58.2	67.1
Actual as % forecast	92.2	71.1	104.2	171.4	152.0	69.6	53.4	12.3	163.1	304.4	170.4	46.2

Source: Fiji Government, 'Supplement to the Budget Address', various.

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- a From the 1988 Budget onwards, budgetary data are presented in accordance with the IMF format. Actual figures for 1983 to 1987 are based on a different format so caution should be taken in interpreting the figures.
- b Including F\$9.6m in new revenue measures.

## References

- ADB (1995) 'Strategy Paper for the Pacific: Policies and Programs for Sustainable Growth'. Manila: Asian Development Bank, Office of Pacific Operations, September.
- Albala-Bertrand, J.M. (1992) *The Political Economy of Large Natural Disasters With Special Reference to Developing Countries*. Oxford: Clarendon Press.
- Alexander, D. (1993) *Natural Disasters*. London: UCL Press.
- Andersen, M.B. (1991) 'Which Costs More: Prevention or Recovery?'. In Kreimer, A. and M.Munasinghe (eds), *Managing Natural Disasters and the Environment- Selected Materials from the Colloquium on the Environment and Natural Disasters Management*. Colloquium sponsored by the World Bank, June 27-28 June, 1990, Washington, DC. Washington, DC: World Bank.
- Amerasinghe, A.R.B. (1984) *Crop Risk Management in the South Pacific*. Wellington, New Zealand. Bowring Burgess Marsh and McLennan.
- Barr, K.J. (1990) *Poverty in Fiji*. Suva: Fiji Forum for Justice, Peace, and the Integrity of Creation.
- Blong et al. (1994) 'Natural Perils and Integrated Hazard Assessment in Fiji'. Final report prepared for Queensland Insurance (Fiji) Ltd, National Insurance Company of New Zealand and Fiji Reinsurance Corporation Limited. Denistone, NSW: July.
- Brookfield, H.C., Ellis, F. and Ward, R.G. (1985) *Land, Cane and Coconuts: Papers on the Rural Economy of Fiji*. Publication HG1/17. Canberra: Australian National University, Research School of Pacific Studies, Department of Human Geography.
- Bryant, J. (1992) 'Poverty in Fiji: Who are the Urban Poor?'. *Singapore Journal of Tropical Geography* 13(2): 90-102.
- Bull, R. (1992) 'Disaster Economics'. *Disaster Management Training Programme*. First edition. New York and Geneva: United Nations Development Programme and United Nations Disaster Relief Office.
- Campbell, J.R. (1984) *Dealing with Disaster: Hurricane Response in Fiji*. Honolulu: East-West Center, Pacific Islands Development Program.
- Carter, W.N., Chung, J.M. and Gupta, S.P. (1991) 'South Pacific Country Study'. In ADB, *Disaster Mitigation in Asia and the Pacific*. Manila: Asian Development Bank.
- Chandra, S.(1983) *Agricultural Development in Fiji*. Canberra: Australian Universities International Development Program.
- Chung, J. (1987) 'Fiji, Land of Tropical Cyclones and Hurricanes: A Case Study of Agricultural Rehabilitation'. *Disasters* 11(1): 40-48.
- Chung, J. (1988) 'Tropical Cyclones and Disaster Relief'. In J.Overton (ed.), *Rural Fiji*, pp. 85-96. Suva: University of the South Pacific.

- Chung, M. (1995) 'Monitoring Sustainable Human Development in Fiji'. Report prepared for United Nations Development Programme, Suva, Fiji. Suva: March.
- EIU (1995) *Pacific Islands: Fiji, Solomon Islands, Western Samoa, Vanuatu, Tonga – Country Profile, 1995–6* London: Economist Intelligence Unit.
- Fiji Bureau of Statistics (1989) 'Social Indicators for Fiji', No. 5. Suva.
- Fiji Department of Regional Development (1993) 'Tropical Cyclone Joni (Monday 7/12/92 – Saturday 12/12/92)'. Suva.
- Fiji Department of Regional Development (1994) 'Tropical Cyclone Kina and Severe Flooding, January 1993'. Final report. Suva.
- Fiji Government (1976) 'Fiji Pine Commission Act', Cap. 151, 1st July. Suva.
- Fiji Government (1983) *1984 Budget Supplement*. Suva: November.
- Fiji Government (1984) *Supplement to the 1985 Budget Address*. Suva: November.
- Fiji Government (1985a) *Budget 1986*. Suva: November.
- Fiji Government (1985b) *Supplement to the 1986 Budget Address*. Suva: November.
- Fiji Government (1985c) *Fiji's Ninth Development Plan, 1986–1990: Policies, Strategies and Programmes for National Development*. Parliamentary Paper No 69 Suva: November.
- Fiji Government (1990) *Supplement to the 1991 Budget Address*. Suva: November.
- Fiji Government (1991) *Supplement to the 1992 Budget Address*. Suva: November.
- Fiji Government (1992) *Supplement to the 1993 Budget Address*. Suva: November.
- Fiji Government (1993) *Opportunities for Growth. Policies and Strategies for Fiji in the Medium Term*. Parliamentary Paper No 2. Suva: February
- Fiji Government (1994a) *Supplement to the 1994 Budget Address*. Suva. April.
- Fiji Government (1994b) 'Fiji National IDNDR Report – World Conference on Natural Disaster Reduction, 23–27 May, Yokohama, Japan'. Suva.
- Fiji Government (1994c) *Supplement to the 1995 Budget Address* Suva: November.
- Fiji Government (1995) *Supplement to the 1996 Budget Address*. Suva: November.
- Fiji Ministry of Agriculture (1993) 'Hurricane Kina: Market Survey Report (Suva Market), Pre-Kina and Post-Kina, December–May 1993'. Suva: Economic Planning and Statistics Division, Farm Management Section.
- Fiji Ministry of Agriculture (1994) 'Extension Division – Annual Report'. Suva: Extension Division, March.
- Fiji Ministry of Home Affairs (1979) *EMSEC Precautionary Manual for Emergencies*. Suva.
- Fiji Ministry of Primary Industries and Co-operatives (1992) *Fiji National Agricultural Census 1991*. Suva: Agricultural Planning and Statistics Division, Statistics Unit, April.
- Fiji Pine (Various) 'Fiji Pine – Annual Report'. Suva.
- Fiji Visitors Bureau (1995) 'Fiji 1994 International Visitors Survey' Suva.
- Fischer, S. and Easterly, W. (1990) 'The Economics of the Government Budget Constraint.' *The World Bank Research Observer* 5(2):127-42.

- Forum Secretariat (1994) *Suva Declaration on Sustainable Human Development in the Pacific*. Suva: United Nations Development Programme and Forum Secretariat, June.
- Forum Secretariat (1995) 'Twenty-fifth South Pacific Forum, Brisbane, Australia, 31 July – 2 August – Forum Communiqué'. SPFS94(15).
- FSC (1994) *Fiji Sugar Corporation Limited*. Suva.
- Glantz, M.H. (ed.) (1987) *Drought and Hunger in Africa: Denying Famine a Future*. Cambridge: Cambridge University Press.
- Hulme, M. (1995) 'Climatic Trends and Drought Risk Analysis in Sub-Saharan Africa'. Norwich: University of East Anglia, Climatic Research Unit.
- Islands Business* (1985) Vol 11, No. 2, February. Suva: Islands Business Ltd.
- IUCN (1993) *The National Environment Strategy – Fiji*. Gland. IUCN – The World Conservation Union and Government of Fiji.
- National EMSEC Task Force (1990) 'Tropical Cyclone Sina (Monday 26 November to Thursday 29 November) 1990'. Suva.
- NDMC (1995) *Fiji National Disaster Management Plan*. Suva: Government of Fiji, National Disaster Management Council, January.
- Norindr, S. (1993) 'Closing Address'. In 'The Role of Voluntary NGOs in Poverty Alleviation: The Discovery of Poverty'. Report on National Workshop on Voluntary Non-Governmental Organizations and Poverty Alleviation Strategies', Suva, 12, May.
- Nunn, P.D, Ravuvu, A.D. Kay, R.C. and Yamada, K. (1993) *Assessment of Coastal Vulnerability and Resilience to Sea Level Rise and Climate Change. Case Study: Viti Levu Island, Fiji. Phase 1: Concepts and Approach*. Apia: South Pacific Regional Environmental Programme.
- OECD (1994) *Guidelines on Aid and Environment No. 7: Guidelines for Aid Agencies on Disaster Mitigation*. Paris: Development Assistance Committee, Organisation for Economic Co-operation and Development.
- Otero, R.C. and Marti, R.Z. (1995) 'The Impacts of Natural Disasters on Developing Economies: Implications for the International Development and Disaster Community'. In Munasinghe, M and Clarke, C, *Disaster Prevention for Sustainable Development: Economic and Policy Issues*. Washington DC: The International Decade for Natural Disaster Reduction (IDNDR) and the World Bank.
- PIDP (1990) 'South Pacific Disaster Preparedness and Response: An Overview of Current Activities and Proposals'. Honolulu: Pacific Islands Development Program, East-West Center.
- Porter, J. (1994) 'The Vulnerability of Fiji to Current Climate Variability and Future Climate Change' North Ryde, NSW: Macquarie University, School of Earth Sciences, Climatic Impacts Centre.
- Prasad, G. (1993) 'Geological Hazards'. In AODRO, 'Report on the Second Disaster Preparedness Workshop for Non-Governmental Organisations', Suva, 19 to 22 April. Sydney: Australian Overseas Disaster Response Organisation, July.

- Reserve Bank of Fiji (1994) *Report of the Commissioner of Insurance – Annual Report 1993*. Suva: July.
- Rokovada, J. (No date) 'Traditional Capabilities and Community Coping Mechanisms: Fiji Experience'. Suva.
- Rokovada, J. and Vrolijk, L. (1993) 'Case Study Fiji: Disaster and Development Linkages'. Workshop Paper No 8, South Pacific Workshop, Apia, Western Samoa, 29 November to 4 December 1993. United Nations Disaster Management Training Programme.
- UNDHA (1996) "South Pacific Disaster Reduction Programme: A Mid-Term Evaluation". Geneva: United Nations Department of Humanitarian Affairs, June.
- UNDHA-SPPO (1993) 'Assessment of Drought Problems in Fiji'. Final report. Suva: United Nations Department of Humanitarian Affairs – South Pacific Programme Office, April.
- UNDP (1996) *Human Development Report 1996*. New York and Oxford: Oxford University Press.
- UNDP/FAO (1994) 'River Improvement Master Plan Fiji: Project Findings and Recommendations'. Report prepared for the Government of Fiji. Rome: United Nations Development Programme and Food and Agriculture Organisation of the United Nations.
- Wilhite, D.A. (ed.) (1993) *Drought Assessment, Management and Planning: Theory and Case Studies*. Boston, MA: Kluwer Academic Publishers.
- World Bank (1985) 'Project Completion Report: Fiji Cyclone Reconstruction Project (Loan 1921-Fiji)'. Report No. 5739. Washington, DC: East Asia and Pacific Regional Office, Projects Department, June.
- World Bank (1991) *Pacific Island Economies: Towards Higher Growth in the 1990s*. World Bank Country Study. Washington, DC: September.
- World Bank (1993) *Pacific Island Economies: Toward Efficient and Sustainable Growth*. Volume 2: Fiji: Country Economic Memorandum. Report No. 11351-EAP. Washington, DC: East Asia and Pacific Region, March.
- World Bank (1995) *Fiji – Restoring Growth in a Changing Global Environment*. Report No. 13862-FIJ. Washington, DC: East Asia and Pacific Region, June.

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