Recovery plan for Fiji’s sugar sector following Tropical Cyclone Winston

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Abstract
Severe Tropical Cyclone (TC) Winston, a category 5 cyclone, with winds of up to 360 km/h, struck the Fiji Islands on 20 February 2016 causing severe damage to agriculture, infrastructure and livelihoods of ordinary Fijians in the western side of the main island. Its overall impact was assessed using the Post-Disaster Needs Assessment (PDNA) methodology developed under the Global Facility for Disaster Reduction and Recovery (GFDRR). In the past Fiji has always bounced back after major disasters and this paper details specific immediate, medium- and long-term plans to bring the industry back to ‘normality’ again. After a brief general background to the sugar sector in Fiji and TC Winston is given, the paper provides insights to the Damage and Loss (D&L) assessment that was structured according to the sector’s major areas of concern: (i) productive and rural cane impacted livelihoods; (ii) the miller FSC; (iii) major productive infrastructures; and (iv) major service providers to the industry. Total D&L to the entire sugar sector was estimated at: FJD 163.6 million comprising FJD 74.7 million in direct damage and FJD 88.9 million as losses to the various industry stakeholders. A Recovery and Rehabilitation (R&R) plan was developed by the industry and structured according to Fiji’s Fiscal Year (FY). However this plan also considers and integration with the industry’s 2012 Strategic Plan (SP). In the short term (FY 2016) it will require investment of FJD 12.49 million and in the medium term (FY 2017) this will increase to FJD 29.64 million. Both short and medium term R&R endeavours are mostly directed to ensure full recovery from TC Winston (i.e. getting back to baseline 2015 production levels). In the longer term (FY 2018 and beyond) additional investments will need to be intertwined with a sector investment plan (translating the 2012 SP into a comprehensive investment plan geared at getting the industry back on track). It does however provide a ‘golden’ challenge for SP, as it presents the industry with a number of opportunities to Build Back Better (BBB – a disaster recovery process) through a number of more efficient programmes. In the long term the R&R plan foresees the mobilisation of FJD 46.85 million, most of which addresses cane rebound and major infrastructures. A major part of these long-term needs could be accommodated by a revised strategic action investment plan, and earmarking on donor funds.

Key words
Post-disaster needs assessment, recovery, rehabilitation, Build Back Better

INTRODUCTION

In Fiji, exports of the agricultural sector are dominated by processed sugar, of which since 2011 a substantial share is fair-trade certified. Between 2008 and 2015, the free-on-board value of sugar exports varied between FJD 150 million and FJD 250 million.

Fiji’s Sugar industry has a unique structure. On the one hand it is organized around a large number of small farmers (in 2015 there were 12711 active cane farmers) operating individual plots under lease. On the other it is governed by the Sugar Master Award that lays out the responsibilities and duties of all the various stakeholders of the industry and has established the Sugar Industrial Tribunal as a mediator/arbitrator between parties. This also sets out the way that the proceeds of the processed sugar are shared between farmers and the miller, Fiji Sugar Corporation (FSC). After deduction of common industry costs from the total sugar proceeds, 70% is allocated to the farmers (and thus determines the basic annual cane price) and 30% goes to FSC to cover their sugar-production costs, the operation of the rail system and transfer of cane from the rail shunts to the mills, and provision of basic crop advice and extension services.

The sugar value chain involves the following major stakeholders: (i) the growers/farmers, which are represented by the Sugar Cane Growers Council (SCGC); (ii) the landowners, represented by the iTaukei Land Trust Board (TLTB); (iii) the Fiji Sugar Corporation; (iv) the cutters and transporters; (v) the Government, through the Ministry of Sugar (MOS); and (vi) a number of other institutions and organizations including the Sugar Cane Growers Fund (SCGF), the Sugar Research Institute of Fiji (SRIF), South Pacific Fertilizers (SPF) Limited, and the Sugar Industrial Tribunal (SIT).
Cane is produced and milled in four mill areas, each of which is sub-divided into a number of cane sectors. Three mills operate on Viti Levu: Lautoka Mill (western side of Viti Levu, and as far south as Sigatoka plus three sectors along the northern side of the island); Rarawai Mill (around Ba and mostly in hilly and undulating terrain); and Penang Mill (mostly around the north-eastern corner of Viti Levu). The fourth mill at Labasa operates on the north-eastern side of Vanua Levu.

Sugarcane production has fluctuated over recent years, but seemed to have stabilized at around 1.8 Mt cane per year (Fig. 1). Indications are that Tropical Cyclone Winston will most probably result in a reduction in cane production of about 385,000 t of cane.

The industry’s level of concentration and ownership has evolved over time and through necessity and is at present heavily concentrated around the FSC. FSC manufactures and sells raw sugar, predominantly to the EU. The Company also sells molasses, a by-product of the sugar milling process. FSC is one of the largest employers in Fiji, with a workforce of approximately 2,000 people during the peak (crush) season.

In 2008 FSC underwent a major rehabilitation programme of its four mills, with the support of Indian technology. Sugar processing has improved substantially since 2010 with conversion rates (t cane/ t sugar) dropping from 12 and more to around 8, translating into sugar production figures of around 200,000 t of sugar a year instead of 130-140,000 t in 2010-2012. This improvement has contributed to stabilizing the price farmers get for their sugarcane, even though the present pricing system is quantity driven instead of quality driven.

For most of the past decade the price paid to the cane growers oscillated between FJD 50 and 60 per t cane, as defined by the Master Award’s sharing of proceeds. Since 2011, in an attempt to encourage farmers to reinvest in cane production, the Government of Fiji and FSC have engaged in a ‘high cane price’ policy, whereby special annual bonus were added, in order to try and sustain a cane price in the vicinity of FJD 80/t cane (a 1/3 to 1/2 increase over the previous average price).

Farmers who are members of the various Cane Producers Associations (CPA or Fairtrade Associations) have access through these associations to a Fairtrade premium, which is at present is equivalent to an additional FJD 9-13/t cane. This premium, however, does not go to individual farmers but supports specific community-driven projects approved by the association.
SEVERE TC WINSTON

Impact

Tropical Cyclone (TC) Winston is the first Category 5 Cyclone to ever hit Fiji and the second strongest to ever hit the Southern Hemisphere. It came with heavy a downpour of rain and strong gusting winds of up to 360 km/h on 20 February 2016. The path it followed was unusual, as none of the previous tropical cyclones that have hit Fiji have returned after going past Fijian waters from Southern Lau into Tongan waters.

Areas that were severely affected in the sugarcane belt in the island of Viti Levu included all four sectors within Penang Mill, all eight sectors in Rawai Mill and the three northern sectors of Drasa, Lovu and Lautoka within Lautoka Mill. The three sectors around Tavua town in Rawai mill area were more severely affected, as they are close to the Penang mill area. These same areas witnessed heavy rainfalls (180-250 mm in 48 h and are directly downstream of the upland areas that received over 450 mm in 48 h). All other sectors in Lautoka mill and Labasa mill (Vanua Levu Island) were only slightly affected.

The overall impact of TC Winston on the sugar sector is summarised in Figure 2.

Of the 12,711 active cane farmers, 6,603 active farmers (52%) were directly affected by TC Winston. A total of 3,791 farmers in these areas have had access to the free-interest loan package developed by the SCGF. Farmers were also impacted through: (i) destruction of houses (estimated at 4,000 farmers) and of farm dependencies, such as fertilizer stores, piggeries, sheds, (estimated at 1,651 farmsteads); (ii) impeded access to their farms/fields (wash out of culverts, damage to track camber); and (iii) damage to drainage facilities and sea-protection works and gates in the lower lying areas.

The severely affected sectors represent 45% of the total area under cane forecasted for the 2016 sugarcane crop. Out of this, 800 ha were destroyed (cane crop uprooted) and 14,608 ha were severely affected (with a forecasted loss in yield of 30%) or moderately affected (with a forecasted loss in yield of 10%).

An additional 138 ha was destroyed in the other less affected sectors of Lautoka and Labasa Mills, and 3,521 ha severely or moderately affected in these same two areas. In total, the expected sugarcane production for the 2016 crush is estimated at 1.44 Mt cane (Fig. 1), i.e. a loss of about 385,000 t cane compared to the 2015 production figures (-21.1%) or 436,400 t cane compared to the 2016 forecasted figures (-23.2%).

Fig. 2. Overall impact of TC Winston.
Due to the entanglement of stalks in the fields, the broken tops and the broken spindles, the quality of the cane will be reduced and the t cane/t sugar for the 2016 crush will need to be revised up from 8 to 9, thus resulting in reduced 2016 sugar proceeds for the whole industry.

Damage and Loss assessment

Figure 3 summarises which sectors of the industry suffered damage and/or loss (D&L) - a clear distinction has been made between damages, i.e. total loss of asset and thus need for immediate replacement, and losses, i.e. loss to income that can be expected from or through the remaining undamaged asset.

Damage due to TC Winston were:
(i) direct damage to crop, however this remains limited as sugarcane is a resilient crop. In some areas, rows of cane (particularly border rows) and specific areas of cane stools were uprooted by TC Winston and will need to be fully replanted. This is considered damage as the asset is lost, cane being a perennial type crop (ideally planted in year one and followed by 5-6 years of ratoons);
(ii) damage to the various mills and the transport facilities managed by FSC;
(iii) damage to cane roads and major drainage facilities in the low lying coastal plains and the damage to a number of facilities used by farmers to store equipment, to accommodate harvest labour gangs, to the road transport equipment in the severely affected areas; and
(iv) damage to the SPF storage facilities and the SRIF seed-cane multiplication facilities and breeding programmes.

The major impact of TC Winston resides in the losses both the farmers and the miller will be facing due to reduced cane production, and thus sugar for export.

The overall assessment of the D&L was subdivided into four major groups:
- Those to the livelihoods of farmers and other rural households;
- Those to the miller;
- Those to the major infrastructure of the industry as a whole;
- Those to the major services providers within the industry.

This paper emphasizes the recovery plan and SRIF’s input into programmes with other stakeholders in the entire Fiji sugar value chain in both the short and long terms.
TC Winston:
(i) ripped apart both greenhouses (and indoor tray tables and overhead irrigation facilities) at Drasa and Rarawai;
(ii) tore off and overturned the crossing facility in Dobuilevu;
(iii) destroyed the laboratory and living quarters next to the crossing facility;
(iv) damaged hot-water treatment plants in Drasa and Rarawai;
(v) damaged laboratory equipment through exposure to rain and humidity and
(vi) damaged a number of research trials.

The greenhouses were essential elements in the cane-seed multiplication process initiated under the SAP with EU AMSP assistance. The Dobuilevu facility was the key to the entire breeding programme of SRIF, equally supported by the EU AMSP assistance and a specific EU-ACP sugar research fund. This has resulted in the postponement/reduction/redesign of all three major activities at SRIF: the breeding programme; the Drasa research trials associated with varieties, soil advice, rouging, pest monitoring; and the on-going seed multiplication programme which has lost the entire set of mother plants (M0 seed) under multiplication in the damaged greenhouses; M1 seed planted in the Drasa estate has partially been damaged and will be rescued to provide for a ‘rapid’ replanting programme in Fiscal Year (FY) 2017 (see R&R plan). This will, however, allow the re-launch of the SAP quality seed cane multiplication programme in 2017/2018 once sufficient mother plants of all varieties to be promoted by this programme have been secured at SRIF. The D&L assessment has considered that the investments for the three programmes during 2016 are totally lost.

RECOVERY AND RECONSTRUCTION FRAMEWORK FOR THE SUGAR INDUSTRY

Rehabilitation and Relief (R&R) for the entire sugar sector requires support from not only the growers and the miller, but also the wider sectoral environment in which these two major players operate.

Since a number of basic services and infrastructures were destroyed or tested to the limit (i.e. the long-term safety and resistance is in question should another major climatic event occur), a number of essential services to farmers have been directly constrained after TC Winston (such as a quasi-collapse of the entire improved seedcane production system, the immobilisation of short-term seasonal credit to farmers by the SCGF to provide for quick emergency loans,…).

The R&R also needs to take into consideration the overall situation of the sugar sector which has been comprehensively addressed in the 2012 Sugar Action Plan (SAP). The SAP sets out a number of structural changes and investment options that are needed for the industry to eventually rebound. Progress with the SAP has been slow and consistently hampered by poor weather conditions and declining socio-economic conditions within the farming community. TC Winston will directly impact the SAP’s drive, delaying its momentum. It does however provide a ‘golden’ challenge for SAP, as it presents the industry with a number of opportunities to ‘Build Back Better’ (BBB) through a number of more efficient programmes.

The TCW R&R thus needs to be two-pronged:
- A direct set of actions aiming at getting the Industry back as soon as possible to its latest performances (taking the 2015 crush as a benchmark). These actions will mostly be geared at mitigating the impact of TC Winston.
- A longer term set of actions that need to drive the industry forward in a BBB drive and enable direct support to the continued implementation of the SAP.

Both sets of actions are clearly intertwined, as just getting back to the 2015 levels is not sufficient for the industry to rebound and survive as a viable industrial sector for Fiji.

The R&R proposals will be implemented in line with the Government’s Fiscal Years (FY), which more or less follow the industry’s basic calendar: crush (June – November) followed by growth periods (harvest to May). It is further structured around two planting windows, one in March-April and a second in October-November.

The R&R proposals are articulated around six major components (Table 1) which need to unfold during the coming three FYs.
**Table 1. Recovery programs.**

<table>
<thead>
<tr>
<th>TWC Recovery Programmes</th>
<th>Alignment to Industry Strategic Plan</th>
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<tbody>
<tr>
<td><strong>A. Cane recovery programme</strong></td>
<td>FY 2016 +</td>
</tr>
<tr>
<td><strong>The aim of this programme under the TCW recovery plans is to ensure that cane production can resume, weather conditions being favourable, at least at an average production level of 1.8 Mt cane as of the 2017 crush. Focus will be on:</strong></td>
<td>General quality cane planting in 7 years. Quality payment system for cane.</td>
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<tr>
<td>• Rescuing existing good quality cane for use as ‘temporary’ seedcane to (a) replant damaged areas and (b) contribute to replanting ± 40% of the severely affected areas. FY2016 50 ha of good cane selected to provide sufficient cane to replant 375 ha in November 2016 in addition to existing replant operations before TCW (600-650 ha).</td>
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<tr>
<td>• This seedcane rescue operation will result in 4000 ha of cane in the subsequent FYs of 2017 and 2018. A specific ratoon management option targeting the remaining 60% of severely affected areas and the entire moderately affected areas during the coming two FYs.</td>
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<tr>
<td><strong>B. Cane harvest and transport programme</strong></td>
<td>FY 2016 ++</td>
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<tr>
<td><strong>This plan ensures that harvesting and transporting operations between the farms and the mill are fully operational in order to ensure efficient milling and good sugar extraction rates (reduced delivery times = better sugar, reduced burning of crop and eliminating stand over crop).</strong></td>
<td>Improving the entire cane logistics between farm gate and the mill reception. Harvesting methods will be investigated and new operational methods tested and implemented.</td>
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<td>• The existing network of cane roads that enable access from the fields to the existing FRA network and/or the various operating shunts of the rail system has been damaged.</td>
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<td>• 38 small bridges have been cleared of debris and the approaches to three rail/traffic bridges in Rarawai mill need to be rebuilt.</td>
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<tr>
<td>• Out of reported 1262 affected cane farms access roads, 739 urgently need spot improvements (reloading/gravelling).</td>
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<tr>
<td>• During recent times, availability of harvest labour (about 10,000 cutters required each year) has been a major concern to the industry.</td>
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<tr>
<td>• Harvest gangs have thus built temporary accommodation to house the outside labour, most of which comes from the outer islands of Fiji or from elsewhere on Viti Levu.</td>
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<tr>
<td><strong>C. Production Infrastructure</strong></td>
<td>FY 2016 +</td>
</tr>
<tr>
<td><strong>The aim of this programme under the TCW recovery plans is to contribute to improving the basic productive infrastructure damaged or under threat of future cyclones or extreme events.</strong></td>
<td>Response to flooding and sea water intrusion.</td>
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<tr>
<td>• Farmsteads have been affected and even though farm houses will be rehabilitated through a Government launched initiative, farm annexes will need to be gradually rebuilt and improved.</td>
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<tr>
<td>• A total 55 km of sea dykes will need to be inspected and local increasing and enlarging dyke levels and base will need to carried out during the R&amp;R and a total of 40 flap gates/outfall structures will need to be refitted with doors/gates and sealings.</td>
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<tr>
<td>• A first phase of gate/sea-dyke spot rehabilitations (FY 2017) will be carried out mainly in the Drasa, Varoko, Veisaru, Wailevu and Bucasiau sectors, during which a more comprehensive rehabilitation programme will be designed before subsequent implementation (FY 2018 and on).</td>
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<tr>
<td>• Part of the existing infrastructure (where gates are dysfunctional and sea-dyke freeboards are threatened by sea-level rise or tidal waves) needs to be rehabilitated.</td>
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<tr>
<td><strong>D. Farmers’ support services enhancement</strong></td>
<td>FY 2016 +</td>
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<tr>
<td><strong>The aim of this programme under the TCW recovery plans is to ensure that farmers have access to good quality cane production inputs</strong></td>
<td>Emergency seedcane production. Long-term seedcane production.</td>
</tr>
<tr>
<td>• Relaunching the improved seed cane production at SRIF and its spill over to farmer driven nurseries is essential, in view of the fact that SRIF has been severely affected both infrastructure wise and seedcane breeding and mother cane multiplication.</td>
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<td>• During FY2017, new mother plants will be produced at SRIF’s level so that a new batch of M1 of M2 seeds can be developed and developed into farmer-driven net-house small nurseries, which will take place during FY2018 and onwards.</td>
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<td>• Provision of fertilizers to farmers will be organized through the existing system whereby FSC registers orders from farmers and advances the cost on the future cane payments to farmers; and SPF Ltd.</td>
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<tr>
<td>• During FY2016, the emphasis is to rehabilitate at least a quarter of the damaged infrastructure and to ascertain the maintenance of the standing M1 crop so that it can continue to mill level nurseries by end of 2016.</td>
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E, FSC – Mills

The aim of this programme under the TCW recovery plans is to ensure that mills are up and running in Lautoka, Rarawai and Labasa efficiently during the coming years.

- The first step (FY2016) will be to ensure the sugar processing equipment and vessels within these three mills have been repaired, the electrical and electronic control facilities are operational and that the sugar processes can be driven without disruptions.
- The stoppage of the Penang Mill will have the direct consequence that about 115,000 t cane will need to be processed at Rarawai Mill (an additional 70 km from Penang) during the coming season 2016 and 2017 crush (at least).
- The quality control system will thus not be run fully fledged as intended, but local and spot trials will continue to be conducted to further test the system and debug it if necessary.
- The Penang Mill will also need to be dismantled and its area cleared during this period; and studies relating to its future will need to be completed and options agreed on with the stakeholders on the way forward at Penang.

F, Capacity building MOS/Sugar sector

The aim of this programme under the TCW recovery plans is to develop the Ministry of Sugar’s and the industry’s overall capacity.

- The most urgent need is to translate the SAP into an operational investment plan for the industry as a whole, its various present stakeholders and a greater involvement of other private services providers or small scale agricultural businesses or farm-estates.
- The industry is faced by a number of fundamental structural challenges (age of farmers, attracting younger farmers, developing joint ventures, land consolidation,…) in which the MOS will need to play a leading role.
- Finally, TC Winston has highlighted the need for the industry to have a number of disaster contingency plans and procedures in place to try and pre-empt major damages and if not to be quick at responding in designing ad-hoc mitigation responses.
- The staff of the MOS team still needs to expand its knowledge of the sector and to increase its coordinating work of the different stakeholders and the various projects and programmes that will have to supervise and follow on behalf of the GOF.

Diversification of products.
Crop is increased significantly and in a sustained manner.
Development of a quality cane payment system.
Industry capacity development.
Structural adaptation to meet various challenges to the industry.

CONCLUSION

The impact of TC Winston has been very significant and the government is putting in every effort to revive the industry. The emergency seedcane, crop recovery, farmer support services enhancements, damage to mills and transport infrastructure are crucial components to bring back the industry on a sustainable ground. In the very short term (FY 2016), FJD 14.17 million will need to be mobilized; and in the medium term (FY 2017) FJD 31.43 million will be required to ensure that the next crop will thrive under more favourable conditions.

In the long term (FY 2018 and on), an additional FJD 46.85 million will eventually need to be mobilized through or in conjunction with other longer term development programmes designed to respond and to support the industry’s 2012 SAP.

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REFERENCES

Un plan de relance pour le secteur sucrier de Fidji après le passage du cyclone tropical Winston

Résumé. Le 20 février 2016, Winston, un sévère cyclone tropical (CT) de catégorie 5 avec des vents allant jusqu'à 360 km/h, a frappé les îles Fidji causant des dégâts conséquents dans l'ouest de l'île principale à l'agriculture, aux infrastructures et aux moyens de subsistance des Fidjiens. Son impact global a été évalué à l'aide de la méthodologie d'évaluation de besoins après une catastrophe (PDNA) mis au point par le Fonds mondial pour la prévention des catastrophes et la réhabilitation (GFDRR). Dans le passé, Fidji s'est toujours remis après des catastrophes majeures et cet article décrit les plans spécifiques à court, moyen et long terme, pour remettre l'industrie cannière sur les rails. Après un bref aperçu du secteur cannière à Fidji et du passage de CT Winston, cet article présente une évaluation, structurée d'après les préoccupations majeures du secteur sucrier, des dégâts et pertes (D&P); (i) les moyens de production cannière (subsistance et rurale) affectés; (ii) l'usinier FSC; (iii) les infrastructures majeures de production; et (iv) les principaux prestataires de service de l'industrie. Les D&P pour le secteur sucrier dans son ensemble ont été estimés à FJD 163,6m, comprenant FJD 74,7m en dégâts directs et FJD 88,9m en pertes pour les diverses composantes de l'industrie. Cette dernière a mis au point un plan de réhabilitation et de remise en état (R&R), structuré d'après l'année fiscale Fidjien (AF). Toutefois, ce plan considère aussi une intégration avec le plan stratégique (PS) de l'industrie en date de 2012. Dans le court terme (AF 2016), ce plan va nécessiter un investissement de FJD 12,49m, allant jusqu'à FJD 29,64m dans le moyen terme (AF 2017). Les efforts R&R dans le court et moyen termes sont consacrés presque entièrement à assurer le redressement total après CT Winston (c'est-à-dire ramener la production au même niveau qu'en 2015). A plus long terme (AF 2018 et au-delà), les investissements additionnels devront être étroitement liés à un plan d'investissement sectoriel (transformant la PS 2012 en un plan global d’investissement visant à remettre l'industrie sur les rails). Cependant, ce plan, en mettant à la disposition de l'industrie un certain nombre de possibilités par le biais des programmes plus efficaces, offre au SP 2012 un défi en or pour mieux se reconstruire (Build Back Better – un processus de redressement après un sinistre). Dans le long terme, le plan R&R prévoit une mobilisation de FJD 46,85m, la marge partie pour faire redémarrer le secteur cannière et les grandes infrastructures. Une grande partie des besoins à long terme pourrait être considérée dans un nouveau plan d'action d'investissement stratégique et aussi en identifiant les bailleurs de fonds.

Mots-clés: Évaluation des besoins post-catastrophe, récupération, remise en état, Build Back Better

Plan de recuperacion del sector azucarero de Fiji despues del Ciclon Tropical Winston

Resumen. El grave ciclon tropical Winston, ciclon categoria 5, con vientos de hasta 360 km/hora, golpeo las islas Fiji el 20 de Febrero de 2016 causando graves daños a la agricultura, a la infraestructura y a las propiedades de los habitantes de la parte norte de la isla principal. El impacto en general fue evaluado utilizando la “certificacion de necesidades postdesastre” (PDNA, por sus siglas en ingles), metodologia desarrollada por el organismo global para minimizar los desastres y recuperacion (GFDRR, por sus siglas en ingles). En el pasado, Fiji siempre se ha recuperado despues de grandes desastres; este trabajo detalla los planes especificos inmediatos, a mediano y a largo plazo para reactivar la industria y regresarla nuevamente a la “normalidad”. Despues de presentar una breve restrospectiva general del sector azucarero en Fiji y del ciclon tropical Winston, este trabajo proporciona datos de los daños y perdidas (D&L, por sus siglas en ingles), evaluacion que fue estructurada de acuerdo con mayores areas concernidas del sector: (i) propiedades productivas y rurales de caña impactadas; (ii) el ingenio FSC; (iii) infraestructura productiva mayores; y (iv) los mayores proveedores de servicios de la industria. El total de daños y perdidas (D&L) de todo el sector azucarero fue estimado en: 163,6 millones de dolares de Fiji (FJD) que incluye FJD 74,7 millones en daños directos y FJD 88,9 millones en perdidas para los accionistas de varias industrias. El plan de recuperacion y rehabilitacion (R&R) fue desarrollado por la industria y estructurado de acuerdo al ano fiscal de Fiji (FY, por sus siglas en ingles). Sin embargo, este plan tambien considero y se integro con el plan estrategico industrial 2012 (SP, por sus siglas en ingles). En el corto plazo (FY 2016) se necesitara inversiones por FJD 12,49 millones y en el mediano plazo (FY 2017) esta se incrementara a FJD 29,64 millones. Ambos, el esfuerzo de R&R a corto y mediano plazo estan principalmente orientados a garantizar una recuperacion completa del ciclon tropical Winston (i.e. regresar a los parametros de produccion de 2015). En el largo plazo (FY 2018 en adelante) se necesitaran inversiones adicionales para intercalar con el plan de inversion del sector (traduciendo el SP 2012 a un plan de inversiones comprensivo articulado para poner a la industria de regreso sobre su carril). Provee sin embargo un reto de “oro” para el SP, porque presenta a la industria un monton de oportunidades para “reconstruir mejor” (BBB – un proceso de recuperacion de los desastres) a traves de varios programas mas eficientes. En el largo plazo el plan de R&R prevee la inversion de FJD 46,85 millones, la mayor parte dirigida a la cana y infraestructuras mayores. La mayoria de estas necesidades de largo plazo podrian ser incluidas en un plan revisado de acciones estratégicas, y asignado con donativos.

Palabras clave: Certificacion de necesidades post desastre, recuperacion, rehabilitacion, reconstruir mejor