SUGAR RESEARCH INSTITUTE OF FIJI

NA DOVU

A Sugar Research Newsletter

Research Today, Stronger Sugarcane Tomorrow

NEW LEADERSHIP

SRIF Welcomes New CEO

Dr Shalendra Prasad appointed Chief Executive Officer



Sugar Research Institute of Fiji is pleased to announce the appointment of Dr Shalendra Prasad as its new Chief Executive Officer. Dr Prasad is a senior agricultural research and development professional with extensive experience in agricultural research, policy development, technology transfer and institutional leadership.

Dr Prasad has a strong academic background in agricultural science and research, complemented by extensive professional experience in crop production, plant genetic resources, agricultural research and development, and agricultural policy. His career has involved working closely with researchers, extension officers, farmers, development partners, academic institutions, private-sector stakeholders and government agencies.

Leadership and professional roles

- Director of Research and Agriculture Scientific Services, Ministry of Agriculture and Waterways
- Registrar of Pesticides, responsible for regulatory oversight of agricultural pesticides
- Chief Editor of the Fiji Agricultural Journal and Co-Editor of the Journal of Agriculture and Forestry in the Pacific
- President of the Fiji Institute of Agricultural Science
- National Representative for the International Atomic Energy Agency's Regional Cooperation Agreement program
- Adjunct Associate Professor, Australian Center for Pacific Island Research, University of the Sunshine Coast, Australia
- Serving Justice of the Peace for Fiji

What he brings to SRIF

With Fiji's sugar industry facing multiple challenges, Dr Prasad brings a research and development perspective that recognizes the importance of productivity improvement, farm diversification, climate resilience, land-use efficiency and improved farmer incomes. His appointment provides an opportunity to strengthen the Institute's role as a centre of excellence for sugarcane research, innovation and knowledge generation.

His leadership is expected to contribute to strengthening research-driven productivity improvements, encouraging innovation, supporting sustainable land use and diversification, developing human and institutional capacity, and building stronger partnerships for the long-term sustainability and competitiveness of Fiji's sugar industry.

El Niño Update

Fiji is in a strong to very strong El Niño, declared in June 2026

Fiji is currently experiencing a strong to very strong El Niño event that was officially declared in June 2026. Often described as a "Super El Niño," it has already set or approached record levels of sea-surface temperature anomalies in the central and eastern tropical Pacific, exceeding those recorded during the major 1997–98 and 2015–16 events.



El Niño drought survey: SRIF officers assessing cane in the field

Global and regional climate models indicate a very high probability (near 100%) that conditions will persist through the end of 2026 and into early 2027, likely lasting until the March–May period.

By September–October 2026 the impacts were already clear across Fiji. Prolonged dry spells, especially in the Western Division, have caused streams and some dams to drop to critically low levels or dry up completely.

Emergency water deliveries have been made to maritime communities. In the sugar industry, farmers have been advised to limit new plantings and focus on conserving moisture and producing quality seed cane for later use.

Looking ahead, Fiji faces continued below-normal rainfall through late 2026 and into 2027. Because of a known lag effect, the driest conditions and greatest pressure on water resources and agriculture often occur months after the oceanic peak of the event.

Sugarcane is particularly vulnerable: reduced yields, stressed ratoon crops, higher fire risk and delayed planting for the 2027 season are expected if dry weather persists.

Previous strong El Niño years that affected Fiji

1982–83

Notable strong El Niño year that affected Fiji.

1997–98

The most comparable event, widely regarded as a once-in-a-century drought. Sugarcane harvest fell by as much as 50% in some areas.

2015–16

Strong El Niño that coincided with Severe Tropical Cyclone Winston.

Broader effects to expect: Tighter water supplies in rural and island communities, upward pressure on food prices, and elevated fire and health risks. Authorities continue to urge water conservation, fire prevention and careful farm management.

El Niño Update Figures

El Niño is active. Dry conditions are expected to continue into 2027.

0–3 mm

October rain at Lautoka, Ba and Tavua; normal is about 81–88 mm

Into 2027

El Niño expected to continue into early 2027

HIGH

Drought risk, and increasing

October rainfall: normal vs actual





Field sampling in the cane belt during the dry spell

November rainfall outlook and areas at risk

BA PROVINCE

25–50 mm

November outlook
Olosara to Penang cane areas

MACUATA PROVINCE

50–100 mm

November outlook
Vanua Levu sugarcane areas

DRIEST AREA

Lomawai: 0–25 mm

November outlook. Also low: Olosara to Penang (25–50 mm)

Why act early?

These are the losses from the 1997/98 drought.
It is a worst-case benchmark, not a forecast.

1.5 Mt cane lost **F$104 m** revenue lost

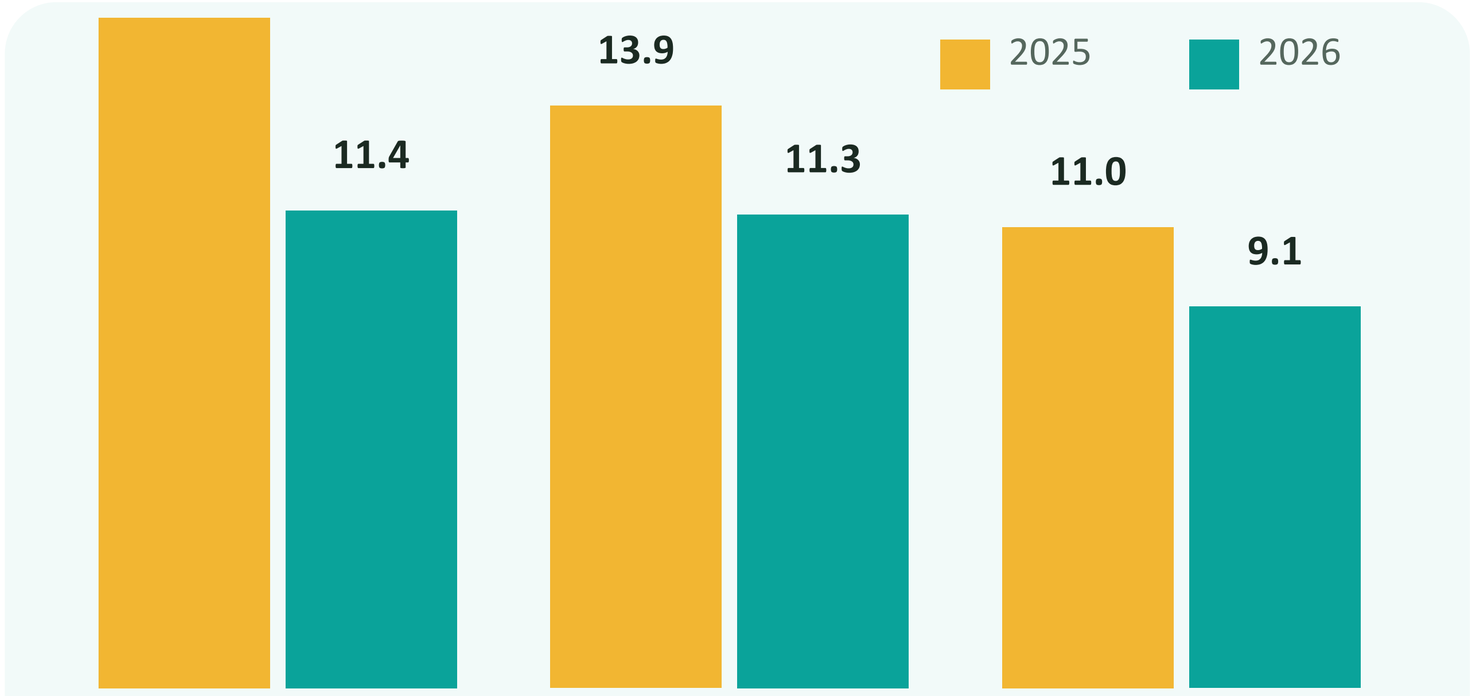
More drought advice: Crop Management (pages 7–8), Crop Protection (pages 9–10) and Your Season Plan (page 13). SRIF will provide monthly updates.
Source: Fiji Meteorological Service, October 2026 Climate Summary; FMS/SRIF Fiji Sugarcane Rainfall Outlook, Vol. 4 Issue 10 (6 Nov 2026).
November outlook figures are the rainfall with a 75% chance of being met or exceeded. October normals are approximate 1991–2020 station averages.

Industry Statistics

FSC operational figures as at 21 September 2026, compared with the 2025 crushing season

TCTS ratio: tonnes of cane per tonne of sugar

Lower is better. A lower TCTS means improved sugar recovery.



LAUTOKA

16.0 to 11.4

29% lower (2025 → 2026)

RARAWAI

13.9 to 11.3

19% lower (2025 → 2026)

LABASA

11.0 to 9.1

17% lower (2025 → 2026)

Harvesting update: what it means

- Sugar recovery is improving. All three mills now need fewer tonnes of cane to make one tonne of sugar than in 2025.
- Cane must reach the mill quickly. Within 48 hours of harvest, 81.5% (Lautoka), 69.8% (Rarawai) and 71.9% (Labasa) of burnt cane received was crushed. FSC is closely monitoring the time from cutting to crushing.
- FSC field staff are checking harvesting daily and working with growers and other stakeholders to improve cane quality and get cane to the mills on time.
- Mill stops inside the mill fell sharply at Lautoka and Rarawai. Stops linked to cane supply fell at Rarawai and Labasa but rose at Lautoka, where consistent cane supply remains a key challenge.
- Better recovery depends on everyone: good quality cane, timely harvesting, reliable transport and less time between cutting and crushing.

Operational Highlights: 2025 season (FSC)

1.33 Mt
Sugarcane crushed

126,522 t
Sugar produced

10.3
Cane quality (POCS)

34,679 ha
Harvest area

10.5
TCTS ratio

83,877 t
Sugar exported

Ratoon Management

Good ratoon husbandry does not change when the rain stops, but the way we apply it must. Here is how SRIF's standard ratoon practices should be adjusted for dry conditions.

Understanding Ratoon Crop

Ratoon crops are successive crops that grow from the stubble or roots left behind after harvest. In Fiji they make up about 80% of the standing cane crop, so how growers manage their ratoons largely decides the size of the national harvest. With the right husbandry, ratoons can stay productive and profitable for several seasons.

Drought puts that at risk. Almost all of Fiji's cane farms rely on rainfall. In recent dry spells, rainfall in some mill areas fell more than 80% below normal.

Right now, most ratoons from this year's harvest are in the tillering stage, sending up the shoots that will become next season's stalks. Dry soil at this stage means fewer shoots, more dead shoots and gaps in the row. The practices below follow SRIF's ratoon management guide, with the changes growers should make while conditions stay dry.

About 80%
of the standing cane crop in Fiji is ratoon cane

Over 80%
below normal rainfall in some mill areas in recent dry spells

Tillering
the stage most ratoons from this year's harvest are in now

1 Harvesting and Stubble Management

- A healthy ratoon starts at harvest. SRIF's advice is to cut the stalks as close to the ground as possible. Low cutting means the new shoots grow from buds at or below the soil surface. These shoots form their own roots, reach deeper, moist soil, and survive dry weather far better than weak shoots from buds left on high stubble.

- Under dry conditions, trash is one of the grower's best tools. Left on the field as a blanket, it shades the soil, slows evaporation and keeps moisture around the young tillers for longer. SRIF and Fiji Meteorological Service advise growers in dry areas to retain cane trash, use minimum tillage and avoid burning.



Figure 1: Proper harvesting method – cutting close to the ground

Ratoon Management

2 Nutrient Management

Every harvest removes a large amount of nutrients from the soil, and the ratoon needs them replaced to regrow. That does not change in a drought. What changes is how and when the fertilizer goes on. Roots can only take up nutrients that are dissolved in soil water, so fertilizer placed in dry soil stays unused until it rains and some of it can be lost.

- Apply Blend C at 2 to 4 weeks after harvest.
- Band and cover. Fertilizer left on dry ground or on top of a trash blanket can be lost to the air before it ever reaches the soil. Place the fertilizer in a band next to the row and cover it with soil.
- Split fertilizer application: one third to be applied 2–4 weeks after harvest and the remaining splits to follow once the rains have set in.

3 Weed Control

Weed control is crucial to ratoon success in any season. In drought it becomes urgent: every weed in the row competes for water that is needed by tillering cane.

- Weed early and often. Remove weeds while the cane is still tillering, before they become established.
- Observe minimum tillage in dry areas. Where cultivation is carried out, keep it shallow.
- Spray herbicides when weeds are actively growing, ideally soon after rain. Drought-stressed weeds take up very little herbicide, so sprays work poorly.
- Don’t disturb the trash blanket. It suppresses weeds as well as holding moisture.



Figure 2: Off-barring operations for weed control using an animal-drawn implement



Figure 3: Tyne cultivator for weed control

4 Ratoon Crop Rotation

Practice crop rotation by including alternative crops in your sugarcane farming system. Crop rotation breaks pest and disease cycles, improves soil fertility, and reduces the reliance on chemical inputs. Leguminous crops, like green manure crops, can be excellent choices.

When the Rains Fail

Protecting Your Cane Through Drought

Dry spells are part of life in Fiji's cane belt. Understanding what drought does to your crop, and acting at the right time, can save both your tonnes and your sugar.



1,500–2,000 mm

of water needed over a single growing season, depending on the weather and the soil

Every cane grower knows the feeling of watching the sky through a long dry season, waiting for rain to come. Drought is one of the most common and costly threats our industry faces. It is also one of the most misunderstood. Much of the damage happens quietly inside the plant, long before a field looks like it is in trouble.

Sugarcane consumes vast amounts of water. Over a single growing season, it needs around 1,500 to 2,000 mm of water, depending on the weather and the soil. For most growers, irrigation is either unavailable or too expensive, so the crop relies on rainfall. That makes good drought management one of the most valuable skills a grower can have.

A slow, hidden squeeze

When the soil starts to dry out, the cane plant does not give up straight away. It fights back in stages.

At first the stress is mild. The plant's cells work hard to hold on to water, and the tiny pores on the leaves partly close to cut water loss. Growth slows, and the leaves take in less carbon dioxide, so the plant makes less food.

If the dry spell continues, the stress becomes severe. The leaf pores close completely and growth stops: no new tillers, no stalk growth and no new leaves. Because cane stalks and leaves are stiff, the crop does not wilt and droop like other plants, so this damage is easy to miss. To stay alive, the plant begins to use up the sugar it has already stored.

In a long, very severe drought, the plant's normal processes break down altogether. Cells and tissues die, the stalks lose their leaves, and eventually the stalks themselves die.

Timing is everything

How much yield you lose depends on when the drought hits.

A drought during tillering means fewer shoots form and fewer survive. Tillering also drags on longer than normal, which delays the start of the grand growth stage. A long dry spell at this stage can kill tillers outright.

A drought during the grand growth (elongation) stage is even more costly. Stalk growth is closely tied to how much water the plant has. Without it, the joints between nodes stay short, the stalks stay short, and cane yield drops sharply. Research shows yield losses at this stage are greater than from a drought during tillering.

When the Rains Fail

Protecting Your Cane Through Drought

Less water, less cane and less sugar

The link between water and cane growth is very direct. A cane plant uses roughly 145 to 300 grams of water to build every single gram of dry matter. The exact amount depends on the variety, the age of the crop and the weather. The less water the crop gets, the less cane it grows.

Sugar content follows a more surprising pattern. A short, mild dry spell can push the plant to store more sucrose and less fibre. A severe drought does the opposite: the plant cannot make enough food from sunlight to meet its daily needs, so it burns through its stored sugar. The result is lower sugar content at harvest.

The cost reaches the mill

Drought damage does not stop at the farm gate. After a long drought, the cane delivered to the mill is of poorer quality. It carries less sucrose, more trash and a build-up of stress compounds that lower juice quality. Milling performance and sugar recovery both suffer.

Juice purity is the key measure. Once cane juice purity falls below about 60%, making sugar becomes practically impossible. The sugar will not crystallise properly, or too much of it ends up in molasses.

For the grower, a severe drought can mean heavy financial losses. These range from lower yields to a crop that is not worth harvesting. In the worst cases, the cane dies and the field has to be replanted.

Managing a crop after drought

We cannot stop a drought, but how growers manage a drought-stricken crop makes a real difference to their losses. One of the most common questions is what to do with a field that has been badly hit. The advice from research is clear: do not rush to slash, and do not carry the crop over.

Carrying a drought-damaged crop over to the next season may seem like a way to recover some value, even after trashing. In practice, it produces less cane the following year than a field that has been slashed. Stalks that have suffered drought injury do not bounce back to normal growth. They are also more likely to be attacked by insects and other pests.

145–300 g of water

to build every single gram of dry matter

Below about 60% juice purity, making sugar becomes practically impossible.



SRIF's drought tips for growers

- Wait for good rain before slashing. Only slash a drought-stricken field when you are confident of at least one rainfall event of 50 mm or more. If you are unsure, wait and slash the crop after the rain.
- Keep the trash on the field. Leave the slashed material as a trash blanket.
- DO NOT BURN drought-stricken fields.
- Do not carry the crop over to the next season, even after de-trashing.
- Keep an eye out for pests in fields that have been through a drought.
- Put scarce irrigation water where it counts most: fields in the grand growth stage.

Facing dry seasons together. Drought will continue to test Fiji's sugar industry. But timely decisions in the field can protect farm incomes and the quality of cane reaching our mills, especially when growers, SRIF, FSC and industry partners work together. Growers with drought-affected fields are encouraged to speak with their nearest SRIF officers for advice on managing their crop.

Cane Weevil Borer & Drought

A Double Threat to Fiji's Sugarcane Industry During El Niño Conditions



Cane Weevil Borer larva feeding inside a cane stalk

Around 10%

reduction in cane yield from CWB infestations, with lower sugar quality and sucrose recovery. During drought years, these losses can be substantially greater.

The 2026 dry season has again reminded Fiji's sugar industry of a challenging reality: drought and insect pests often work together to magnify crop losses. Among the major insect threats facing sugarcane growers, the Cane Weevil Borer (CWB), Rhabdoscelus obscurus, continues to be one of the most damaging pests in Fiji's cane belts. While CWB causes significant losses under normal conditions, its impact becomes far more severe during prolonged droughts associated with El Niño events.

El Niño-induced droughts are characterised by below-average rainfall, elevated temperatures, increased evapotranspiration and prolonged soil moisture deficits. Under these stressful conditions, sugarcane plants experience reduced growth, impaired root activity and lower physiological resilience. CWB-infested canes are particularly vulnerable because the pest attacks the very tissues responsible for storing water, nutrients and sucrose. The combined effects of drought stress and internal stem damage often accelerate cane decline and increase crop mortality.

The larval stage of CWB is responsible for most of the economic damage. The grubs tunnel through the lower internodes and stool tissues, feeding on the soft, juice-rich portions of the stalk. These feeding galleries become packed with fibrous residues and frass, disrupting the movement of water and nutrients within the cane. Under drought conditions, this internal damage further restricts the plant's ability to transport moisture from roots to shoots, causing premature yellowing, wilting and eventual death of affected stalks.

Field observations across Fiji's sugarcane-growing areas have consistently shown that CWB-infested canes exhibit more severe moisture stress symptoms than healthy plants during extended dry periods. Research and industry assessments indicate that infestations can reduce cane yield by around 10%, while also lowering sugar quality and sucrose recovery. During drought years, these losses can be substantially greater as weakened plants struggle to compensate for pest injury.

Another concern is the increased susceptibility of drought-stressed canes to secondary infections. Tunnels created by CWB larvae provide entry points for opportunistic fungi and other microorganisms that accelerate stalk deterioration and juice quality losses. International studies on Rhabdoscelus obscurus have reported that stem rots associated with weevil damage can significantly worsen lodging and stalk collapse, particularly when canes are already weakened by environmental stress.

During dry periods, farmers should be vigilant for symptoms such as patchy wilting, drying leaf sheaths, yellowing foliage, dead hearts in young cane, weakened stalks, lodging and the presence of characteristic tunnels filled with fibrous feeding material near the cane base. Because the pest remains concealed within the stalk, routine monitoring is essential for early detection and intervention.

Cane Weevil Borer & Drought

A Double Threat to Fiji's Sugarcane Industry During El Niño Conditions

Integrated Pest Management (IPM) remains the most effective approach for mitigating CWB damage during El Niño years. SRIF recommends maintaining strict field sanitation by removing heavily infested stools, eliminating leftover harvest residues and destroying breeding sites. Farmers should minimise mechanical injuries during harvesting and transport, as wounds often attract adult weevils for egg laying. The use of clean planting material (Certified Seed Cane) and regular field inspections are equally important in reducing pest carryover into subsequent crops.

One practical technology increasingly adopted by growers is the SRIF-promoted split-cane bait trap. The trap uses freshly split sugarcane billets wrapped in black plastic to attract adult weevils and assist with population monitoring. Widespread deployment of these traps can help identify infestation hotspots early and support timely management decisions before economic losses occur. Recent SRIF farmer demonstrations have highlighted the effectiveness and affordability of this monitoring tool for community-based pest surveillance programmes.

With climate models continuing to project periods of increased drought risk across the Pacific, strengthening crop resilience has become more important than ever. Effective CWB management should be integrated into broader drought preparedness strategies, including maintaining healthy ratoons, optimising soil moisture conservation practices, improving drainage in preceding wet seasons and adopting recommended agronomic practices that minimise plant stress.

As Fiji navigates another period of climatic uncertainty, growers are encouraged to remain proactive. While drought cannot be controlled, early monitoring and effective management of Cane Weevil Borer can significantly reduce losses and help safeguard productivity. A healthy cane field is not only better equipped to withstand drought but is also less likely to succumb to opportunistic pests and diseases. During El Niño conditions, managing Cane Weevil Borer is no longer just a pest control issue, it is a critical climate resilience strategy for Fiji's sugar industry.



Stalks split open to show internal tunnelling and rot



CWB trap set by our Crop Protection Team

Key Farmer Recommendations

- Regularly inspect fields for wilting and weakened stools
- Deploy split-cane bait traps for monitoring adult CWB populations
- Remove and destroy heavily infested stools immediately
- Maintain strict farm hygiene and residue management
- Avoid using infested seedcane for planting
- Reduce harvesting injuries that attract adult weevils
- Report severe infestations to the nearest SRIF office for technical assistance

For advice on Cane Weevil Borer monitoring and drought management, contact the SRIF Crop Protection Team or your nearest SRIF Office.



Our History

From a research station in the 1890s to an independent institute

1890s — CSR sets up the first sugarcane research station, an entomology station at Nausori, after Fiji Leaf Gall is found in 1886.

1904 — Station moves to Rarawai, Ba: the 3rd sugarcane breeding station in the world.

1950 — Leaf and soil analysis lab established.

1958 — Flowering induced artificially; centralised station set up in Lautoka.

1961 — Photoperiod house synchronises flowering for breeding.

Mid 1960s — Training centres lay the foundation for the extension division.

1968 — Insectary method developed to screen varieties for Fiji Leaf Gall.

1969 — Fertilizer trials and Downy Mildew screening begin.

1970 — Tissue culture produces Ono, the first known disease-resistant variety in Fiji.

1970s — Full research station built at Balawa, Lautoka; later moved to Vakabuli, Drasa, with EU support.

1972 — Computer software used for yield analysis by topography.

1974 — Drainage survey produces a drainage map of all cane sectors.

1976 — Cell fusion techniques investigated.

1976 – 2005 — Research continues to advance with 20th and 21st century technology.

2006 — **Gains independence from FSC through an Act of Parliament and becomes SRIF.**

2007 – 2018 — EU funding builds the head office and sub-stations in the four mill areas.

Progress, Services & Highlights



SRIF Headquarters at Vakabuli Road, Drasa, Lautoka

2006 – PRESENT DAY

Progress so far

Independence opened the way for donor funding. SRIF secured European Union funding from 2007 to 2018, which established its head office and sub-station offices in the four mill areas and paid for vehicles, laboratory equipment and farmer-focused research projects. Notable achievements include:

- NIR technology to analyse research cane samples
- Hot water treatment plants for seedcane sterilisation
- A clean seedcane distribution system
- International workshop on nobilisation of Erianthus
- Laboratory and molecular laboratory equipment
- Field days and demonstrations of crop husbandry

Our Services

1 Plant Breeding

Breeding, testing and releasing new cane varieties

2 Soil & Leaf Testing

Soil and leaf testing, fertilizer recommendations, new herbicides and husbandry practices.

3 Pest & Disease

Pest and disease management, variety screening and brixing of varieties prior to harvesting

4 Seed Cane

Disease-free seed cane and hot water treatment

5 Technology Transfer

Training, demonstration plots, field days and seedcane distribution plots

6 Advisory Services

Farm advisory services and donor-funded projects

Your Season Plan

2026 to 2027: decisions made now shape the 2027 crop



Sugarcane fields in Fiji's cane belt

SEP – NOV

2026

Protect moisture, avoid losses

- Retain trash, minimum tillage
- Defer planting in the driest sectors
- Keep firebreaks clean; check crops weekly

DEC – FEB

2026–27

Plant only on real moisture

- Follow Fiji Meteorological Services/SRIF updates for planting windows
- Use certified seed cane
- Fill gaps only when moisture is available

MAR – JUN

2027

Establish and consolidate

- Check plant cane and ratoons
- Split fertilizer by moisture and soil test
- Watch for termites, scale, mealybug and disease after rain

Contact SRIF for crop and input advice, or to report unusual pests and drought damage.

Lautoka 892 1839 · Rarawai 892 1377 · Penang 892 1287 · Labasa 892 1376

Events & Updates



Agriculture Show booth in Labasa

1 Fiji Day Celebration

Celebrated on 9th October at the SRIF Headquarters and at the various SRIF stations.

2 Mucuna Seed Initiative

Initiating Mucuna seed for future distribution.

3 Hilly Harvester Machine Trials

SRIF continues to run trial operations for the hilly harvester machine along the cane belt areas in the west.

Did you know?

1. The Sugar Research Institute of Fiji (SRIF) currently has **19 commercial** sugarcane varieties available for planting in Fiji.
2. SRIF has a total of 123 employees, comprising 35 staff members and 88 general employees.
3. SRIF operates research stations in Ba, Wairuku, Dobuilevu, and Labasa, with its headquarters located at Drasa, Lautoka.



Our People in the Field

General employees of SRIF at work across the cane belt



Planting seedcane at the SRIF Estate in Lautoka



Fertilizer application for ratoon cane at SRIF Estate, Lautoka



Agriculture Show booth in Labasa



Agronomy trial assessment in Labasa



El Niño drought survey



Agronomy trial assessment at SRIF Estate, Lautoka

Our People in the Field

General employees of SRIF at work across the cane belt



Grower visit in Labasa by our Technology Transfer Officer



Brixing of trial varieties at our breeding station in Ba



Practising manual weeding at SRIF Estate, Lautoka



Grower visit in Ba by our Technology Transfer Officer



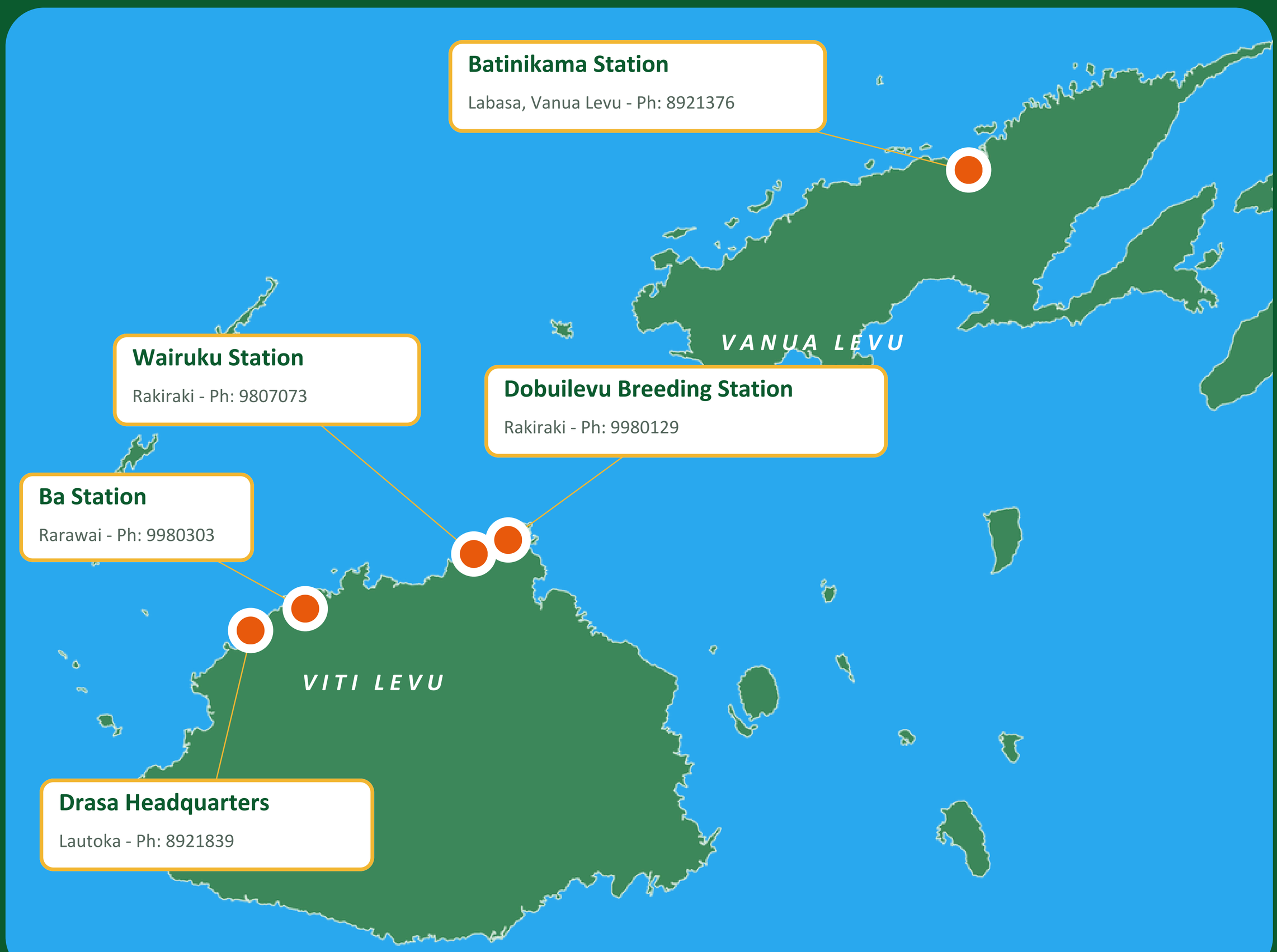
CWB trap by our Crop Protection Team



Transplanting of tissue culture plant in the field

Contacts

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