



Western and Choiseul Province Earthquake and Tsunami Disaster

Rapid Assessment of Agriculture and Food Security



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Photos



Kakazu village, Choiseul: Houses and gardens swept away and into swamp behind village. Only the church remains.



Sasamuqa: Tsunami caused destruction of most buildings. Kindy school building seen here swept across road and into secondary school area. (Unfortunately our camera stopped working and we don't have photos of the devastated village parts of Sasamuqa and Panarui)



Extensive landslides affect almost 25% of the weather coast of Rannonga.

Cover: cracking and slippage of sweet potato garden in Obobulu village, Rannonga

Summary:

A team from Kastom Gaden Association conducted a rapid assessment of agriculture impacts of the earthquake and tsunami disaster in Western and Choiseul provinces. 15 villages were visited. The selection of villages was based on KGA partner locations and on opportunities that arose during the assessment. The findings are intended to help inform relevant agencies about impacts but more detailed surveys are needed in more locations. Urban areas (ie Gizo) were not included.

Main findings:

- 1) In general, in most locations surveyed, staple food production has not been affected. In Ranonnga and a few other areas where landslides damaged gardens or garden access, about 10-20% of households may face a serious shortage of food, another estimated 50-75% will face some mild to moderate food shortages in the coming months.
- 2) Further wide scale rice distribution is not required. Only targeted food relief to particular identified needy families with significant garden losses should be made. Rice distribution is causing increasing conflict and delaying the return to normal food production activities which can cause food shortages in 3-4 months time if this continues.
- 3) Urgent needs are location specific and need to be much better targeted. There are many urgent relief needs such as shelter, water/containers, basic household goods, clothing, kerosene and lamps that are required depending on location. These needs rather than food should be the main focus. Relief distribution has been observed to be uneven and some severely affected areas (e.g. Sasamuqa, Panarui and Kakaza) have received too little while some mildly affected areas have received too much.
- 4) In severe tsunami affected areas livestock have been moderately to severely affected. In some instances 50-75% of poultry have been killed and 25-50% of pigs. Recovery of livestock numbers will be slow and difficult.
- 5) Sup sup gardens, fruit and nut trees within villages have been moderately to severely affected in tsunami hit areas and in a few instances by land slides. They are not critical for food supply and most households will have adequate food to meet calorie needs but micro nutrient deficiencies will be of concern, particularly for children.
- 6) Many small coastal gardens (e.g. banana and cassava) have been destroyed. In general these gardens are not critical for food supply as the bulk of staples is still available in bush gardens. But there may be some vulnerable individual households who relied on these coastal gardens who need to be identified. Such households will need targeted support.
- 7) Coconut plantations have not been significantly affected. In tsunami areas and to a lesser extent earthquake areas numerous copra driers have been damaged or destroyed along with many copra sheds and other infrastructure. This is likely to have a substantial impact on copra production in affected communities.
- 8) Sago palm and bush materials are generally still available with some losses. However in severely affected areas where large numbers of houses need to be rebuilt or villages are being resettled, there will not be enough sago palm and perhaps also other bush materials for construction to meet demand

- 9) Very few households are resorting to use of emergency foods such as kakake or wild yams which indicates there is not an overall food shortage or that rice has arrived.
- 10) Villages close to Gizo rely heavily on Gizo market for fresh produce marketing. Most of this has ceased due to fear to travel in the sea and many households being concerned to conserve the food they have available. Other local markets are or will operate normally apart from in severe tsunami impact areas where local marketing has stopped.
- 11) Impact of reef destruction and reef raising is not yet known but is likely to be severe in Rannonga in particular. In future many communities will face decline in reef fish availability. Many tsunami affected villages have lost canoes and other equipment required for fishing.
- 12) There is a shortage of garden tools (hoe, axe, bush knife) in severe tsunami affected areas and for some households who lost tools from landslides in earthquake affected areas.

Implications for food security and agriculture recovery

(Note that villages named below are examples only and are those known to the assessment team but there will be others that were not visited that have similar needs)

Immediate actions:

1. Urgent need for substantially increased relief supplies to Sasamuqa, Panarui and Kakaza area in Choiseul (Shelter, basic tools and cooking equipment, clothing, kerosene and lamps, for 400+ households) and trauma counseling. Assumption is made that similar increased assistance is also needed Voza area, Choiseul and in affected villages in Shortlands that were not visited (no estimate of household numbers)
2. Better targeting of food relief to areas and families with particular food needs due to garden destruction (e.g. Rannonga).
3. Reduce through much better targeting of needy households and phase out other food aid (rice etc) which is undermining self reliance capabilities and nutrition. Encourage return to garden activities – planting and harvesting - as soon as possible.
4. Supply of garden tools (bush knife, hoe, axe) to tsunami and landslide impacted households.
5. Long term food relief may be required for some families (perhaps 10-20%) in Rannonga over the coming 3-4 months while they replant new crops. Should encourage local community support networks where possible (e.g. where low numbers affected with total garden destruction) and also explore purchase and supply of root crops from non affected areas to inject money into local economy.
6. More detailed assessment of surface cracks on Rannonga is required by specialists to assess future stability/instability of landscape following uplifting and possible tilting of island.
7. Dealing with feral domestic pigs destroying gardens (Sasamuqa, Titiana, Nusa Baruku, New Manda) is a very urgent issue.
8. Provision of fishing canoes and canoes for access to gardens where the majority of canoes have been destroyed (Sasamuqa, Kakaza, parts of Simbo, Pailongae etc)
9. Distribution of sago palm, bush rope, nails, locally milled timbers and basic construction tools to affected households where houses have been destroyed/collapsed. Where necessary bring these materials from other areas if local sources are insufficient or labour unavailable for harvesting.

Medium term actions

1. Restoring poultry and pig livestock to pre disaster levels in tsunami affected areas through multiplication off site and reintroduction after houses are rebuilt and other more immediate needs met.
2. Seed (open pollinated) and planting material (rapid multiplication of root crops and bananas) dissemination to more rapidly restore diversity of production in all seriously affected areas.
3. Fruit, nut and coastal tree nurseries to restore lost stock and for new settlements
4. Copra driers and sheds/buying points need to be rebuilt and copra purchasing restored.
5. Reconstruction of transport infrastructure where damaged – wharves (Buri, Emu harbour), bridges (on Sasamuqa – Sepa road).
6. On going support for reconstruction of housing will be required in severely affected areas (e.g. supply of portable sawmills, roofing iron, nails, tools, perhaps some kind of community organized labour support etc) to prevent future food shortages / and or housing shortages from the labour burden of reconstruction on such a large scale for severely impacted communities.

Long term actions

1. Technical training for sloping land agriculture (on Rannonga in particular) to stabilize soil erosion and risk of landslide.
2. Awareness on and supply of some materials for planting of food security crops at household level – e.g. wild yam blocks, kakake, etc
3. Better land use management and planning to reduce disaster risk
4. Strengthening of CBOs and network groups to assist in future disasters
5. More radios, email stations and mobile phone access in rural areas
6. Awareness and education on earthquakes and tsunami for preparation and understanding
7. Replanting of coastal trees and mangroves for protection of coasts
8. Build disaster response capability for PMN for rapid bulk open pollinated seed and planting material distribution to large number of households on short term notice – perhaps backstopped by an SPC capability.

Full Report

Following the Monday 2nd of April, 2007 earthquake and Tsunami disaster, the Solomon Islands indigenous NGO Kastom Gaden Association (which is the only national agriculture specialized NGO), sent a team to Western and Choiseul Provinces from the 8-16th April to support relief efforts through a more detailed rapid assessment of impacts on agriculture and how KGA and other organizations can best respond to agriculture recovery where required. This decision was made following extensive radio consultation with partners through the KGA radio network and an offer of assistance to NDMO and other agencies that was not responded to. Three Honiara, one western province, one KGA adviser and one Choiseul based staff conducted the assessment over seven days. This included time spent liaising with relief agencies, local committees and partners, field visits to villages and gardens and attendance where possible at meetings of the UN coordinated disaster response office in Gizo.

Assessment TOR and methods

The terms of reference for the assessment was:

- 1) To provide more detailed analysis of agriculture impacts of the disaster in a few selected locations and suggest what might be needed for agriculture recovery in the short, medium and long term
- 2) To assess the impact of the disaster on pre existing KGA programs, communities and partner organizations in Western and Choiseul Provinces and suggest what changes, if any, are required to these projects.

The focus of the assessment was on villages where KGA programs are currently active as well as other villages in Rannonga and Choiseul that were able to be visited as part of World Vision and Red Cross assessment teams respectively. This report deals primarily with point 1 of the TOR (point 2 is to be covered in a separate document on project impacts and planned changes for KGA).

Places visited and methods

A total of fifteen villages were visited by the team (six villages in Rannonga, four in Choiseul, one in Vella Lavella and five in Kolombangara). The sites were based on opportunity and the location of KGA partners and programs. As such the findings provide a snapshot only of a number of different situations on each island. It is not a comprehensive assessment of each village but the information is intended to assist other agencies to carry out more detailed analysis in all impacted villages and learn lessons and gain ideas from the KGA recommendations. The focus was on agriculture and impacts on production for consumption and for sale. The assessment did not attempt to assess nutritional status of disaster-impacted communities beyond broad observations on diet changes. The assessment did not assess communities on Gizo as it was felt this is being covered by other agencies. Due to limited time and resources Shortlands and Rendova were not visited although there are reports of extensive damage in these two island groups perhaps similar to Sasamuqa/Panarui in Choiseul.

Most villages visited included informal discussions with separate male and female groups and walks to gardens and through villages and temporary settlements/shelters, particularly to garden areas where damage was reported. In addition an agriculture questionnaire was provided to the ADF after they offered to collect additional data during their extensive visits to disaster-impacted villages. At the time of writing ADF had collected data from 10 additional villages using questions provided by KGA. This information will be summarized in a supplement to this report.

For some background information on the typical farming system in western and Choiseul province please refer to attachment 2.

Impacts on agriculture

Food production.

In general, in most locations, staple food production has not been affected. The important exceptions are a large number of villages in Rannonga and limited number in other locations where landslides have destroyed some gardens and/or made access to some garden areas difficult or impossible. In these locations replanting of gardens in new locations will be needed and should commence as soon as possible. Depending on the number of gardens lost (most households have 2-3 gardens), some households will face some food shortages over the coming 4 months. In a minority of cases, where all bush gardens were lost to a family, they may require food aid for a period of months. We suggest these households need to be individually identified and confirmed by impacted communities and relevant agencies including visiting the impacted gardens before long-term food aid is given for that household. For example in Mondo 13% of households have lost all gardens. In some areas, such as Kakaza in Choiseul, the tsunami has destroyed canoes making access to gardens difficult or impossible where boats are required to travel through swamps and along rivers to garden sites.

Livestock

In general the earthquake itself has not significantly affected livestock production. Although there are instances of pigpens and poultry houses leaning or falling down, they should be repairable within a household's own means. In severe tsunami affected areas livestock have been moderately to severely affected. In some instances 50-75% of poultry have been killed and 25-50% of pigs (pig numbers were more difficult to confirm as many have moved into bush). In these areas recovering livestock to pre disaster levels will be a slow and difficult process given the time and effort required to breed up stock from limited numbers of chickens and pigs remaining and other pressing needs from the disaster such as rebuilding housing and village infrastructure. Without external assistance livestock numbers will take years to recover.

Sup sup gardens, fruit and nut trees.

These resources have been moderately to severely affected in tsunami hit areas and in a few instances by land slides in villages. In these high impact tsunami affected areas the result is a loss of important supplementary greens, vegetables and fruits that provided an important nutritional and income supplement for many households and in particular contribute to child and infant nutrition. They are not critical for food supply and most households will have adequate food to meet calorie needs but micro nutrient deficiencies will be of concern. Fruit, nut and banana trees will take from 1 to 10 or more years to recover. Sup sup gardens can be re-established more quickly (under six months) provided planting material is available and adequate household labour (i.e. once shelter and other more immediate needs are addressed).

Coastal gardens.

Many households maintain smaller gardens on the coast or edge of plantations and often including vulnerable groups such as single mothers, widows, elderly and disabled. In severe tsunami hit areas these gardens have been washed away or severely damaged by salt-water inundation. In general these gardens are not critical for food supply as the bulk of staples is still available in bush gardens. But there may be some vulnerable individual households who need to be identified who relied totally or significantly on these coastal gardens. Such households may need targeted support if the local community is not able to provide them with food. Small numbers of such households exist in some of the survey areas – for example 1 out of 55 households in Kakaza (less than 2%). In larger villages there will be more.

Plantations and copra production

Coconut plantations have not been significantly affected and seem to have withstood the tsunami and earthquake well although some coconuts were lost to landslides in Rannonga. Numerous copra driers have been damaged or destroyed along with many copra sheds. Some infrastructure such as wharves and road bridges has also been destroyed or collapsed. Together this may have a substantial impact on copra production in affected communities – effecting household income options. Copra infrastructure will need to be rebuilt as soon as possible. It is not expected that this will have a significant impact on overall copra production in both provinces as in most areas plantations have not been affected at all and enough copra driers remain either inland or in places not affected by the tsunami. But individual villages and households will be affected and need to be better identified.

Sago palm and building materials

Some sago palm has been destroyed around villages, through landslides and wave/salt water damage. But in general resources for building houses remain. However in severely affected areas where large numbers of houses need to be rebuilt or villages are being resettled, there will not be enough sago palm and perhaps also other bush materials for construction to meet demand. Some kind of external assistance will be required for house reconstruction in devastated areas where a majority of houses were destroyed as it local resources will not be able to supply enough roofing (sago) and other material at one time. Care will need to be taken not to exhaust sago palm resources otherwise there will be future shortages that will take over 10 years to recover assuming replanting occurs.

Emergency or reserve foods

Very few households are resorting to use of emergency foods such as kakake. Use of these is a sign of stress and food shortage. However only a small number of households are using these foods in any one of the villages assessed. This indicates that food is available from gardens and or that rice has already been received. In Rannonga fear to go into the bush is preventing use of wild yams and other food resources but they do not appear to be needed by most households.

Markets

Villages close to Gizo rely heavily on Gizo market for fresh produce marketing. Most of this has ceased due to fear to travel and many households being concerned to conserve the food they have available. This is a wise strategy but will lead to reduce supplies to Gizo until confidence returns. As a result income sources are reduced and at the same time very little produce is available in Gizo market. In more distant locations some village markets have been disrupted due to the scale of the disaster locally (e.g. Sasamuqa) while other local markets are on as normal (e.g. Lambu Lambu). Some individuals may have difficulty transporting produce where canoes and outboard motors have been damaged or destroyed.

Summary description of each Island/village visited and impacts:

Rannonga

Main agriculture impact is from extensive and continuing landslides, which have destroyed or are preventing safe access to food gardens. Loss of garden land is leading to food shortage for a minority (variable from village to village) of families at present but this may increase over time as about 50% of families have lost some gardens and will therefore face some kind of food shortage over the next four months depending what stage the garden was at. Many of these families can be supported by communities/ immediate family members who have surplus of food supply provided the number of impacted families per village is not high. There is evidence of rising dependence mentality and some manipulation of aid organization. Impact on livestock is minimal and village gardens and fruit trees are largely intact. The future impact of raised and destroyed reefs is not known but is likely to be catastrophic on reef fish supply and reef ecosystems and will impact on nutrition and food security in the future.

Villages visited and summaries:

- **Mondo** has been very seriously impacted by the earthquake Majority of houses are damaged, and 3 - 4 completely destroyed. Water sources have been covered with landslide (streams) and water supply been destroyed by the earthquake. Some basic possessions were destroyed (lamps, plates and cups). Gardens in bush as damaged by landslide and cracks in garden areas, access to garden is a serious problem as the road to the gardens been covered by landslide. There a sago palm in this area but will not carter for the whole population as rebuilding on large scale will be difficult. Village plans to relocate and have already start the clearing the site also has water source about 40 minutes walk from the site.
- **Suvuru/Kundu** has been seriously impacted by the earthquake, Majority of houses are damaged, mostly lean and of the 35 houses, 7 were destroyed. Each family has a garden, however more than 10 have been damaged by landslides. These gardens are up to 1 hour away up steep slopes. Fear of further landslides prevents them collecting this food and so they are reliant on rice brought in by government agencies; and fruit and vegetables collected locally. People don't think to relocate now as land will be an issue. The school buildings and staff houses were damaged.
- **Obobulu** has been impacted by the earthquake and destroyed 11 houses and the rest lean. Unconfirmed number of gardens destroyed by landslide and road access to the garden been covered by landslide. A garden visited have cracks in the potato field and that worried people to move around as there are cracks in slope area and even in flat areas. Water supply source has been damaged and due to landslide the water for bath and cooking is dirty and people still using. Some possessions were damaged (lamps, plates, cups etc).
- **Rava** has a total of 28 household and the earthquake destroyed 7 house and the rest to low and medium damaged. 4 -5 gardens were covered by landslide and others were partly damaged. A number of possessions were damaged during the earthquake (lamps, plates, cups etc). People fear to move around which make it hard to know how many family lost their garden.
- **Lale** with a total of 162 households and most houses were destroyed. 1-2 garden per family, approximately 50%-60% have been destroyed by landslide. Fear of landslide and cracks in the garden area and tracks has stopped people to visit there garden. A number of

possessions were destroyed during the earthquake. The school was severely damaged as well as the clinic.

- **Buri** has a total of 150 households, 33 were destroyed and the rest were partly damaged. Number of gardens were damaged in landslide and other gardens access road were covered during the earthquake as most of the garden are in slope hills. The only water source people use sink as the result of the quake and people camp in the location near the spring up in the hills. Fear of moving around by people at this stage make it hard to really know the number of affected gardens.

Choiseul

In Choiseul Province the impact on agriculture is from the Tsunami and its damage to villages. In the most extreme impact areas (Sasamuqa to Panarui, around Kakaza, and reportedly Voza and surrounds) this is going to effect the capacity of communities to maintain adequate food production but at present there are no food shortages and all food supply is intact. Nutritional (sup sup) gardens around houses have been largely destroyed and in Sasamuqa and Panarui where these gardens were widespread and regularly used, this will impact on nutrition over time. as will continued consumption of relief supplies of rice. For most communities in South Choiseul there is little significant impact on agriculture with the exception of the tsunami impact 'hot spots' around Voza, Sasamuqa and Kakaza.

- **Kakaza** has been very seriously impacted by the tsunami. Majority of houses are damaged, most seriously and 14 completely destroyed. Water sources have been contaminated by salt water (wells) and or destroyed (water tanks). Community is highly traumatized with most living in four very cramped camps made from plastic sheets and salvaged materials and one leaking tent from NDC. Most basic possessions (lamps, pots, tools, clothes) lost. Gardens in bush as undamaged but access (by dugout canoe through swamp area and river) is a serious problem as all but one canoe were destroyed in the tsunami. Estimated 50% of chickens lost, no reported loss of few pigs in village. 4 copra driers destroyed. No sago palm in this area and limited sources nearby so rebuilding on large scale will be difficult. Village plans to relocate but new site also has water problems. Few choices due to land issues.
- **Papara** has been moderately impacted by the Tsunami. Water washed through 2/3 of village but without major force. 4 houses, numerous copra and petrol sheds were destroyed while many kitchens collapsed and most were flooded. Sup sup gardens, fruit trees and coastal gardens damaged by salt water. Many canoes reported lost or damaged but at least 15 remain. 2 pigs drowned and some chickens (under 25%). Bush gardens and food supply not effected. Excessive quantities of rice have arrived here relative to number of impacted families and garden work has reportedly stopped as all are eating rice and disputes within the community over distribution are on the rise.
- **Panarui** has been severely impacted by Tsunami. Majority of coastal hamlets are over 75% destroyed. Community estimates 50 houses have been completely destroyed with many more severely or moderately damaged. In land hamlets and area around school mildly or not effected. Large numbers of productive sup sup gardens, fruit trees, banana, taro and cassava plots washed away. Estimate 50-75% of chickens lost and presumably some pigs drowned and pens destroyed although not reported. Coastal copra driers are likely to be destroyed (no numbers). Many families are eating reserve foods (bush greens and kakake). Shelter is inadequate with only 3 tents distributed. Rebuilding required is immense and will negatively impact households capacity for food production if substantial assistance is not provided. Clinics is intact.
- **Sasamuqa** has experienced severe tsunami impact and is probably one of the worst effected areas from the disaster. Majority of households in 5 of 7 villages that make up

Sasamuqa have been destroyed. Sasamuqa Disaster Committee reports 270 buildings destroyed including houses, kitchens, school, hospital buildings. Sasamuqa was the most town like centre on Choiseul and has a higher population density than other areas. There was a very high level of sup sup gardens in this area and these have been almost totally destroyed and will impact nutrition for regular meals. High loss and destruction of fruit trees and coastal trees as well as coastal plots of banana, cassava, potato. An estimated 50-75% of poultry and 50% of pigs have been lost. A serious issue is destruction of pig fences and free ranging domestic pigs now destroying gardens. Bush gardens not effected by tsunami. 4 out of 9 micro project copra driers destroyed along with numerous sheds. Very high level of trauma in the community with four people reported as 'going crazy' (eg ceasing to speak, not wearing clothes). At least 170 households loosing their homes and all or most of their possessions. Some assistance has reached here, including a ADF field hospital, but assistance to families for shelter and basic needs is very inadequate for the scale of needs. Medical waste such as syringes, chemicals and medicine is a concern in the hospital area where it is widely scattered. Sasamuqa market is closed and not likely to reopen for some time.

Kolombangara:

There is no significant impact on agriculture or food security. Some copra driers and some pigs and chickens have been lost as well as livestock shelters damaged but this is not widespread. No food or disruption to food supply at all apart from the short term trauma that has stopped garden work.

- **Sausama;** Some houses damaged and are leaning due to earthquake. Kokorako feed plot and other fruit trees growing near the sea front are damaged by salt water spray. Some houses are leaning caused by earthquake but minor damage.
- **Kukundu.** Has been moderately impacted by the Tsunami. Water washed through to the playing field and reached the level of the classroom but without major force and damage. 4 houses, 1 canoe shade and petrol sheds were destroyed while the power house is flooded with water. Sup sup gardens, fruit trees, coastal gardens and on the river bank damaged by salt water. Bush gardens, school farms and food supply not effected. Supply of rice have arrived but the principal said that the school has enough supply of rootcrops to supply to the dining hall for the student consumption for the school year. Their urgent need is for clean water, as Water sources have been covered with landslide. Classes resume this week despite some repair and maintenance to be done on the school classroom and staff houses that were damaged by the earthquake & Tsunami.
- **Ghetere;** Six permanent and Five leaf houses were moderately damaged by the earthquake. Some houses built along the coastal line experienced the waves washing through their houses especially the kitchens but with minor damage, Bush gardens were not damaged except people might be running short of food supplies within the next 2 or 3 months because people stop making garden as all are eating rice. Two third of the people still remain in the bush (Temporary camp) and some decided to built houses there as their new settlements. Bananas and other fruit trees grown along the coastal are damaged by the sea water spray, however, this is only a minor concern of the people.
- **Kuzi** has been moderately impacted by the Tsunami that washed through part of the village but with minor force. Severe damages is done to 23 houses by the earthquake as houses are leaning ready to collapse. Two petrol sheds were destroyed while some kitchens collapsed. Sup sup gardens, fruit trees grown backyard are damaged by salt water spray. Bush gardens and food supply not effected except earthquakes that opens up the mounds exposing the root crops that will be vulnerable to pests and sunlight. Quantities of rice were delivered to the village community which seems to make people to stop their gardening routine and spend most time moving their belongings to a new

camping site and demanding more on rice. People have expressed their urgent need would be sanitations as theres no proper toilet at the camp and people were using the bush. Some of them started to build houses as majority of the people decided to use this temporary campsite as a new settlement.

Vella Lavella:

Only one village in Velalavela is visited and there is no significant impact on agriculture or food security. This might be similar cases to other villages around lambulambu. In terms of other damages /losses it might be mild but needs further assesment.

- **Lambulambu**, sea water swift through the lower part of the village but with less force. Only 2-3 leaf houses damaged with some lean -not safe to use as accomodation. Most supsup garden were lost to the sea . Chikens and pigs were not affected by the Tsunami and earthquake. KGA HF radio with solar panel was safe and people are using this during the time of disaster to report . Bush garden were not damaged , hence there are food adequate food supply. However, Villagers still fear to go the the garden thinking that there would be another earthquake or Tsunami.

Agriculture Impacts – Summary Table

Village	Population household	Housing shelter	Bush garden	Garden tools	Sup Su garden fruit and nut tree	Livestock (pigs and chickens)	Copra driers	Availability and use of emergency food	Local market access issues	KGA assets and programs	Others
Mondo, Rannong	? 60 households	Most households low to medium damage 2-3 destroyed building in settlement	1/2 of village garden land no access (landslides) 6-7 gardens by landslide 28/60 households have lost at least one garden 5-10/60 households have lost all food gardens	28/60 households have lost some or all garden tools (stored in bush gardens: Qio)	OK	OK – some damage to chicken houses by earthquake	One copra shed collapsed with copra ready to go inside	1 family using kakake have w yams but afraid to go to bush	Afraid to go to sea; (gizor market); at time reserved for own consumption	Radio OK Farmer school classroom cleaning. Bulkings prepared for harvest and undamaged	Access gardens prevented by multiple landslides and dangerous surface cracking along or access track. Disaster committee formed - well organized
Suvuru/Kundu Rannong	35 households	7 houses damaged and the rest low to medium damage	11/35 households garden buried (landslide) Most garden access to gardens (landslide)	Some tools lost in garden	OK (some and nut trees lost in landslide)	OK	Some copra driers destroyed	No swamp and cannot grow swamp taro	Afraid to move around due to raising reef		A clinic was destroyed and a temporary clinic
Lale Rannong	162 households		Most garden destroyed by landslide	Few farmers lost their tools in the garden (tools)	OK Some fruit and nut trees in the land	OK	Copra shed partly damaged	Few farmers have swamp taro			
Obobulu Rannong	77 households	7 houses collapsed The rest lean	8 gardens were buried Most garden mounds destroyed and tubers exposed to sun	Some tools lost in the garden	OK	OK	One copra shed collapsed	Have kakake but not using	Afraid to travel to sea from earthquake		Some study on the crack to see whether safe to move around in garden areas.

Rava Ranong	28 houses	8 houses destroyed the rest partly damaged	4 gardens were buried (lands) Most potato mounds destroyed	OK	OK	OK	Some coconuts driers destroyed	Have kakake not used	Afraid to trade (tsunami)		Relief work should really target the priority problem
Obobulu Rannong	77 houses	7 houses collapsed The rest lean	8 gardens were buried 11 lost access road	Some tools lost in the garden	OK	OK	One copra shed collapsed	Have kakake not used	Afraid to trade to sea from earthquake		Some study or the crack to see whether safe to move around in garden areas.
Newbar Rannong	25 houses	8 houses destroyed the rest partly damaged	4 gardens were buried (lands)	OK	OK	OK	One copra shed collapsed with copra ready to go inside	Have kakake	Afraid to trade (tsunami)		Relief work should really target the priority problem
Buri Rannong	150 households	33 houses	Unconfirmed number of gardens were destroyed	Some lost Easting utensils were damaged	OK but few damaged due to landslides	OK	Unconfirmed number of coconuts driers destroyed and copra shed	Have kakake	Afraid to trade		Water is major issue as the water they have been using is sinking and the source they are using cannot cater for the whole village.
Kakaza	Less than 300? 100 families	55 houses damaged (minor to severe damage - no figure) 14 houses destroyed	OK – but access problem as one canoe to paddle to garden areas. One family lost all garden	Many lost tools As well as much of kitchen and cooking equipment and utensils	Heavy damage to all trees and coastal gardens destroyed (banana, cassava, pineapples, others)	Pigs OK, Approx 75% of chickens lost.	Lost 4 driers – destroyed by wave	One family digging kakake, but other bush foods but not using	Sell to logging company currently afraid to go and no canoes.	none	Water is a major issue wells polluted by salt water tanks destroyed Only one private tank for 100 families/

Papara	50-60 households destroyed	4 Houses destroyed many kitchen flooded collapsed	OK	Some tools lost along with kitchen supplies	Some damage limited	Generally OK – 1 of pigs drowned	4 or 5 pigs and coconuts destroyed	Not using have them available	?	No [ne]	A lot of rice porridge stockpiled but appears unnecessary – disputes already occurring
Panarui	?	50 households destroyed	OK	Many garden tools lost along with kitchen equipment and utensils	Supplies mostly destroyed along with many fruit trees	Many chickens (50-75% lost), probably some pigs drowned	? – probably some lost	Eating sorghum, jua, zuku,	Market closed at Sasamu – likely for some time		Not enough tents – or distributed and then another 1 during visit. Bridges washed away.
Sasamu	? 300 + households seven villages	270 buildings completely destroyed. Most villages 75-100% houses destroyed	OK	Garden tools lost, all kitchen supplies, clothing etc	All supplies gardens and most fruit trees lost.	50-75% chickens lost, many pigs – survey needed	4 driers for micro projects destroyed	Using zuku, jua, muqa have more bush if needed	Market at sasamu closed. Market building	KGA office building in but all completely washed away or damaged. Radios OK used by disaster committee	Disaster committee in place; many pigs destroying food gardens, level of trauma, lack of shelter, bridges on road, household debris saturation issue, people afraid to go fishing. Hospital garden destroyed
Lambara	?	2-3 leaf houses collapsed. Others with minor to medium damage. Clean	OK	OK	Some supplies gardens lost to sea	OK	1 fell down	Not using have it	No change – market logging company	KGA radio partner centers are OK	
Sausama	Local villages total	Some houses collapsed from waves and earthquake but mostly minor damage	OK	Chainsaws sausama damaged salt	Kokorai feed plots damaged by salt – general OK	Some lost chickens – youths – need to survey	?	Have it but using	No change Gizo – market group operating	Radio and farmer schools OK – kitchen leaning and needs repair	

Vanga		Inor damage-lean by earthquake	Minor damage-sea spray		OK	OK	OK				
Kuzi	500? population	23 houses collapsed others partially damaged	Some garden damaged, many destroyed exposing root tubers	Some kitchen utensils broken and damaged	OK	OK, only 2 chicken houses destroyed earthquake		Few people grew kaka but not use them	Reserve for own consumption		Drinking water still dirty. Plan to resettle in new area
Kukundu	>600 population 400 students	Classroom floor damaged 1 permanent house collapsed others partially damaged earthquake	OK, except the cassava, banana gardens along river bank	OK	1 or 2 supsup gardens destroyed	OK				OK	Urgently need water supply to be fixed for use by the student
Ghetere	400 population	6 permanent & 5 leaf house damage earthquake	OK except in pests damage sweetpotato increasing	OK	OK	OK	OK	1 or 2 far using kaka	People reserve garden for own consumption	OK	2 third of house hold still remain the bush garden
Kukundu											

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Attachment 1

KEY QUESTIONS TO GUIDE DISCUSSIONS (ALSO SUPPLIED TO ADF)

1. How many households have damaged gardens?
2. If there is damage, what caused the damage? (salt water inundation, landslide, other)
3. Please confirm visual observation from air or ground of scale of damage to gardens if yes above:
4. How many households are currently collecting food from gardens (today or in the last few days)? If not, then why not?
5. How many households cannot get to their gardens? (due to landslide, flood, fear etc)
6. Are there pigs and chickens visible in the village?
7. How many households lost pigs or chickens due to the disaster ? What happened?
8. Is there visible uplifting of coral reefs in the area?
9. Are there emergency/reserve foods available (such as kakake, sago palm, wild yams, bush ferns?)
10. How many households are currently using emergency/reserve foods?
11. How many households do not have any food gardens?
12. How many households depend on cash income for purchasing a majority of their food needs?

Any other observations on agriculture impacts?

Attachment 2

Background information

Description of family food production system

This section is provided as background for the information of relief agencies to better understand the household based agriculture of this region. A typical household farming system in Western and Choiseul province is a diverse and resilient system that provides for food, income and social obligation and cultural needs made up of:

- Two to three bush gardens where starchy staples are grown in mixed garden plots with different staples (sweet potato, cassava, taro, yam, banana) taking from 3 to 9 months to harvest depending on the species and variety. These are planted and harvested sequentially in manageable blocks with regular inputs of family based labour in order to achieve regular harvesting. Different gardens may have different crop combinations depending on soil, labour availability, and distance from village. Land is left to bush fallow variously from 3 to 15 years in a mosaic pattern walking distance from villages. Generally market crops are mixed with food crops and not in segregated gardens.
- Pigs and chicken are kept by an estimated 40-60% of households (pigs typically 1-5 per household in raised wooden pens with food provided daily; chickens 5-20, mostly free range, with an estimated 10% in pens)
- Fruit and nut trees and small quantities of greens, vegetables, bananas, root crops are grown around the house and village and are important for nutrition and diversity. Close to villages some smaller plots of cassava, sweet potato and banana are typically found for easy access and may be particularly important for elderly people and others who cannot travel to distant bush gardens including some families who may have limited land rights.
- Coconut and in some areas cocoa plantations are typically around the villages and on coastal fringe with 1-3 different plantations per family. Only some families have copra driers and the rest either use other methods, hire other driers and even sell wet copra and coconuts to other local buyers with driers.
- Nuts are socially and economically important for Western and Choiseul province. Each family or tribe has grove/s of a number of nut trees and often located in the bush or at old village sites.
- Numerous wild and semi cultivated foods are also harvested from the forest, bush fallow, swamps and mangroves and are seasonally important and provide for food in times of scarcity/stress. For example in Choiseul over 83 species of wild yams, fruits, nuts, leaves, mushrooms from the forest are traditionally used for food.
- Fishing is done in dugout canoe in deep sea, on the reef (by canoe or diving with spear or netting) by most, but not by all households. Some fishing is done using outboard motor (mostly for sale). Shells are collected from mangroves and reefs – often by women.