Climate Responsive and Inclusive Water Security Planning in Rural Solomon Islands – Pilot Outcomes

T.Rankin,
Program Manager – Water, Sanitation & Hygiene (WASH)
Plan International Australia,
Melbourne Australia
e–mail: tom.rankin@plan.org.au

A.Anisi
WASH Coordinator
Plan International Australia in Solomon Islands,
Honiara, Solomon Islands
e-mail: a.anisi@plan.org.au

M.Abel
Knowledge and Communications Director
Live & Lean Environmental Education,
Melbourne, Australia
e–mail: michelle.abel@livelearn.org

G.Hulanga
WASH Officer
Live & Lean Environmental Education Solomon Islands
Honiara, Solomon Islands
e–mail: gregory.hulanga@livelearn.org

Dr R.Souter
WASH & IWM specialist
International WaterCentre
Brisbane, Australia
e–mail: r.souter@watercentre.org

ABSTRACT

A 2016 nationwide survey of rural Solomon Islands revealed only 54% of people accessed an improved water supply and this didn't consider the Sustainable Development Goal 6 targets of "access for all" and "safely managed" (on premises, free from contamination and available when needed).

With funding from Australian Government's Water for Women Fund, Plan International Australia in partnership with Live & Learn Environmental Education and collaboration with International WaterCentre has drawn on existing evidence and approaches, revolving around WHO's *Water Safety Planning* process, to develop the contextualised Community-based Water Security Improvement Planning (CWSIP) guide for Solomon Islands. The guide is designed to support government and civil society water, sanitation and hygiene (WASH) implementers to support community improvements to the sustainability, inclusivity and climate resilience of rural water supplies in Solomon Islands. It will eventually incorporate climate predictions being developed in partnership with CSIRO.

The process is currently being piloted in six (6) villages with promising initial results including, improved understanding on water cycle, risk and hazards within communities, pro-active actions to improve water access for all, and development of community water security improvement plans. The process will be reviewed, revised and formally published by June 2020.

KEYWORDS

Water Safety Planning, climate resilience, gender, social inclusion, WASH, rural

INTRODUCTION

Water, Sanitation and Hygiene (WASH) statistics for **rural Solomon Islands** are some of the worst in the world with **access to an improved water source at only 54%** and access to **improved sanitation at 13%**[1].[1] Stunting is reportedly impacting 32% of children[2] and 7% of child under-5 mortalities result from diarrhoea[3]. Access to water supply and improved sanitation was highlighted as the highest priority need, particularly in rural areas, during the provincial consultation process for Solomon Islands National Development Strategy (NDS) 2016-2035.[4] The NDS articulates commitment to meet Sustainable Development Goal (SDG) targets, including Goal 6, to achieve 'water and sanitation for all' (universal access) by 2030.[5]

Developing a single water source will not build resilience for communities in Solomon Islands, which generally depend on multiple (2-5), mostly unimproved, water sources (e.g. river, open well, unprotected source)[6]. Rainwater is currently underutilised (13% of rural households use rainwater as primary water source[7]).[8] However, this offers opportunity for improvements in water security and resilience through protection and improvement of multiple sources in each community.

Despite a solid sector policy and strategic plan, the need for evidence-based, effective and sustainable approaches to WASH in Solomon Islands is significant. The mandated community operation and maintenance of rural water supply systems is problematic. To date, **there is no evidence of holistic water management approaches, including water safety planning, implemented to improve rural water supply in Solomon Islands.**

The **Solomon Islands Government's (SIG)** ***Community Engagement Guideline[9] (revised in 2019)*** **are a positive improvement in practice regarding construction of community water supply systems,** but does not address the requirements of SDG6 related to water quality[2], quantity and expectation of water being available "on premises". SIG approaches do not assess or respond to the risk of climate change on water resources management or equip communities with the necessary skills to identify risks and hazards faced by their water resources. SIG has hesitations about wide-scale water quality testing of rural water supplies due to its limited capacity to respond to poor water quality results.

In July 2018, Plan International Australia (Plan), in partnership with Live & Learn Environmental Education (LLEE) began implementing the New Times, New Targets (NTNT) project through the Australian Government's Water for Women Fund. The New Times, New Targets Project aims to improve sustainable and inclusive access to WASH services and facilities with schools, clinics and communities in rural Solomon Islands. In parallel to this, International WaterCentre (IWC), in partnership with the NTNT project, commenced research into Community-Based Water Management in rural Solomon Islands, also with funding from the Water for Women Fund.

[1] The SDG6 target of "safely managed" water and sanitation services is not currently measured in Solomon Islands but is estimated to be close to 0% for 'safely managed' water services due to sharing of water points, poor reliability of water supply and high levels of water contamination.

[2] There is currently no available data for water quality in rural water supplies in Solomon Islands.

To respond to the need for improved community-based water management and to build on a growing movement towards holistic water management and strengthening of climate resilience (see below relevant resources), Plan, LLEE and IWC collaboratively developed the Community-based Water Security Improvement Planning (CWSIP) approach, which enables communities to prepare a "*CWSIP("Our good water plan")*. The approach was developed **to support government and civil society implementers** of WASH projects, **to improve the sustainability, inclusivity and resilience of rural water supplies in Solomon Islands**.

METHOD/APPROACH

The *CWSIP* approach builds on and contextualises existing Water Safety Planning and Water Security Improvement approaches, specifically adopting and adapting the most relevant aspects to respond to the added complexities posed by environmental change, natural disasters, community capacities, demographic change and social marginalisation in Solomon Islands. The approach was specifically designed to strengthen social inclusion through the process.

The process was developed drawing mostly from the following approaches:
• UNICEF's Climate Resilient WASH Guidelines[10]
• WHO's Climate Resilient Water Safety Plans[11]
• WHO's Equitable Water Safety Planning[12]
• Sustainable Water Partnership's Water Security Improvement Process[13]

The CWSIP adopts the main concepts of Water Safety/Security Planning, in particular, **the approach to describe community water systems, identify risks, identify and prioritise controls and actions, and prepare an incremental, community water security improvement plan**. Importantly, the steps have been adapted to suit the local context in rural Solomon Islands and incorporate consideration for both climate change and social inclusion.

Figure 1. Village map comprised of several 'zone' maps depicting WASH resources.

Community engagement activities have been informed by Rapid Rural Appraisal/Participatory Rural Appraisal approaches[14] and broader community development processes, which acknowledge that the energy a community will put into any activity will be in proportion to their involvement in the planning of that activity. Rather than relying on outside experts developing a plan in consultation with a community during one intensive visit, the CWSIP is a scaffolded, cyclical, action-learning exercise undertaken over multiple visits. This better suits village rhythms and allows for more experiential and incremental learning and improvement. Local people are not just participants but actively involved in gathering and sharing information and stories with other members of the community though the process. The approach centres on oral rather than written communication to suit local knowledge-sharing preferences, builds on local knowledge and governance systems, and is deeply informed by a social and historical understanding of the contextual factors and emerging **research by IWC on community-based water management** in the Solomon Islands.[15]

One of the key aspects of the approach is not necessarily working at the village-wide level with a suite of village representatives, but rather, working with a broader cross-section of a community at smaller levels - namely, zone/group and household levels. This better reflects the cultural and material reality of local life-ways, where a village or 'community' is not a homogenous, undifferentiated 'whole' but rather made of 'communities within communities'. Social cohesion and collective action are much stronger at this more micro-level, reflecting familial/cultural ties and also corresponds with the micro-particulars of the WASH situation.

The *CWSIP approach* has been introduced through ongoing pilots in four (4) communities in western Guadalcanal Province, Solomon Islands. The guide is a field resource to guide facilitation of activities with village members and support risk/hazard identification and mitigation planning, led by community members.

This has included training of NTNT project staff to facilitate the CWSIP approach in target communities (September 2019). The NTNT staff began implementing the process in October 2019, initially targeting 3 communities with different characteristics (i.e. coastal/inland, large/small population, high/low sanitation coverage, good/poor access to water).

The process was reviewed in November 2019 at which point the process was incomplete in the 3 pilot communities. Again in February 2020, another brief reflection on the process was conducted. The entire, seven (7) step process had been completed in two of the communities. A fourth community will begin piloting the original process in March 2020.

In February 2020 a revised, briefer process began pilot implementation in an additional community. A second one will commence piloting in March 2020.

A formal revision of the process is scheduled for May-June 2020 when the findings of all six pilot activities are completed. At which point, the process will be published and shared broadly with the Solomon Islands WASH sector.

In parallel to this, Plan and LLEE have been have been working with CSIRO, through the Australian Government's Australia-Pacific Climate Partnership program. The intention of the CSIRO partnership, is to improve the access to, understanding and application of climate data

to strengthen decision-making at local, catchment and Provincial levels. This work is ongoing and will be incorporated into the *CWSIP* process.

PRELIMINARY OUTCOMES/RESULTS

The piloting of the *CWSIP* is ongoing and at various stages in different communities. There are however, already, tangible impacts in some communities and a strong sense from NTNT project officers and community members that the process is valuable.

As with other water safety planning approaches, the *CWSIP* process is cyclical, following a continuous cycle of assess, plan, act, monitor. As such, there is no definitive end point at which to make an absolute evaluation and it is expected that more significant action points (e.g. expansion or upgrade of piped water system) will require some time to achieve (i.e. maybe several years).

Initial outcomes and results have provided learnings both on the perceived value and impact of the process as well as identifying opportunities for process refinement. Many of the assumptions in the development of the tool have been assessed.

<u>Reflections on the process:</u>

- Understanding of the water cycle in communities is proven to be very limited. When asked where water comes from, community members often refer to "the ground" but don't understand the connection between precipitation, percolation and groundwater recharge. Improving understanding of the water cycle is a critical precursor to encourage communities to prioritise catchment protection to ensure water availability and quality.

  NTNT staff have found that simplifying and shortening the explanation of the water cycle in the revised process, was still effective at improving understanding of community members. The revised process eliminated complex language such as 'evaporation', 'precipitation' and 'percolation' and includes a pre-drawn diagrams of water cycle. Instead asking prompting questions such as "where does water come from?", adding to a pictorial description of the water cycle slowly before describing the cyclical process.

  It is agreed that visual aids (contextualised poster/diagram and explanatory video using relatable metaphors for percolation and evaporation) will assist this process. They will be developed in the near future and tested.

- Water quality in communities is not routinely tested and contaminated water is often believed 'safe' and consumed by households. The introduction of on-site water quality testing using the AquaGenx compartment bag test (CBT) is, according to NTNT project staff, a key educational and motivational activity within the *CWSIP* process.

  Having instant feedback to community members (rather than laboratory testing where results are often not returned to communities for several months, if at all) and a visual indicator of water quality has a profound impact. In one particular village with a piped water system, water quality

Figure 2. Water quality testing being conducted by NTNT project

tests showed the water quality to deteriorate as it got closer to the point of consumption. This is an important message for community members and revealed the implications of the common, poor practises related to household water storage. In several cases, household members have responded immediately, changing household water storage and treatment practises, such as now boiling drinking water), and no longer storing water in large containers, dipping mugs inside to drink but using smaller bottles filled at tap stands that can be poured.

With better community-based water management, it is hoped that household water treatment will be unnecessary once water system improvements and household storage practises are improved. With good facilitation, there was no significant backlash on the project to resolve water quality issues. However, it is seen as good practise only to carry out water testing where support to remediate negative results is available and intended.

- People are primarily concerned with water access and proximity to their house, while water quality remains a secondary concern. In one of the small pilot villages, where all households have access to water, the impact of the *CWSIP* process was less profound compared with the strong interest and response in the other pilot communities where water access remains a challenge for households. In this instance the water testing was done by NTNT staff, with results verbally reported to community members rather than visually. In the other small pilot village, water quality testing was done publicly, with community members visualising and discussing results. In these locations, the impact was significantly different, with community responding by changing behaviours (e.g. Change water storage habits) and making physical improvements (cleaning spring box).

- Running risk and hazard explanations and identification with community members was an 'eye-opener' for them. Engaging community members to identify their own risks and hazards to their water supplies helped them understand and consider these. According to NTNT project staff, "people previously thought that 'water is already here' without considering where it comes from and how it can be contaminated." In one pilot village, upon completion of the risk/hazard identification activity, community members independently responded by cleaning the spring box to reduce contamination.

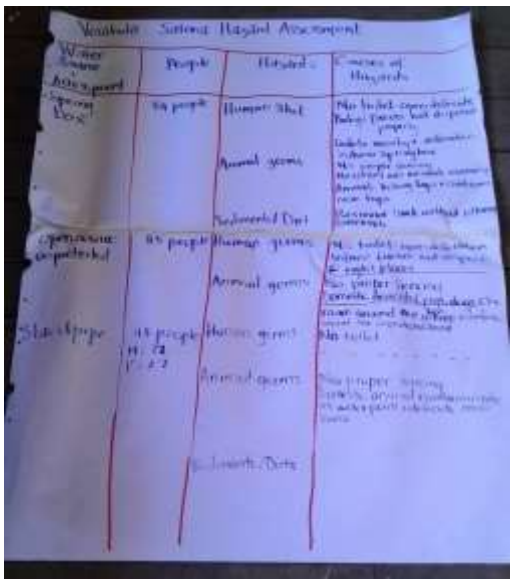

Figure 4. Village hazard assessment

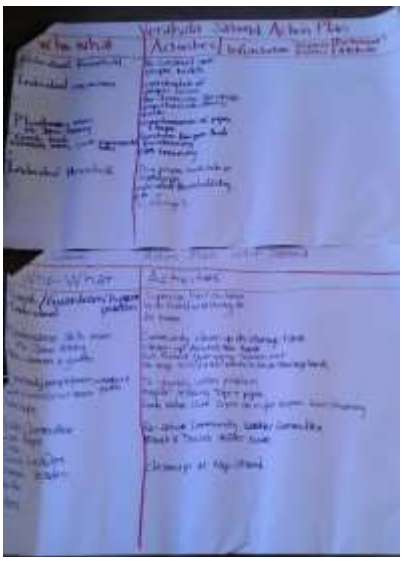

Figure 3. Village action plan to manage hazards and risk related to community water supply.

- Placing high expectations on community capacity can encourage engagement and ownership. The *CWSIP* process includes community members conducting their own household surveys and capturing of stories describing marginalised water access. The process ambitiously expects that the 'zone' representatives within the community will do this in between support visits from NTNT project staff. There were mixed results to this approach, but in several cases, community members successfully recorded and summarised household surveys and shared results back to fellow community members and zone representatives. This included some examples of stories of marginalisation that triggered discussions within the community and elicited an active response. This process may be improved if backstopping of NTNT facilitators to answer questions during surveys is available (the process involves training community members and then expecting them to do this in the absence of external facilitators).

- Some women in communities responded to say that "everything 'hiding' in the village has come out", suggesting the *CWSIP* process provides a platform to unveil community frustrations and differences in access to water. With this the case, this supports the development of practical solutions to resolve water issues.

- In the large pilot community, stories of single mothers needing to leave children unattended while they walk to collect water were not revealed through the household survey or story capture process but rather through community dialogue during presentation of household summaries by 'zone' representatives. During this activity, single mothers present, spoke out about their own experiences.

  This resulted in prompt action to control water distribution via gate valves on the community tank to ensure water reaches these vulnerable households on a daily basis. While this was a great example of increased awareness and commitment to social inclusion, NTNT staff report that more effort is needed to uncover and amplify the voice and agency of marginalised households.

- The *CWSIP* process focuses engagement of 'zone' representatives who are responsible for gathering and cascading information and sharing with the broader community. This puts significant onus on 'zone' representatives. There is an example in one pilot village where broader community consultation appears to be insufficient. There is friction among community members stemming from water access. It is not clear whether these arguments are prompted or exacerbated by the *CWSIP* process or not.

  The project is now facilitating discussions to support conflict resolution and practical action planning to address the underlying issues and explore the source of differences. The limited community financing for major rehabilitation of water systems is a significant constraint and may be supported by the Project and SIG once evidence of sustained community commitment to 'self-help' is available.

- The *CWSIP* process has prompted actions in both communities with poor and good water access with the focus of actions differing between effort to improve access and water quality through both practical improvements and changes in behaviour.

Timing of activities:

- In the first pilot village, implementation of the process was rushed, cramming activities that are scheduled over multiple visits into a 3-4 day intensive period. Due to the depth and complexity of the *CWSIP*process, this was an ineffective way to implement, overwhelming community members not used to long periods absorbing new, technical information. This confirms the appropriateness of the adjustment from conventional Water Safety Planning timetable of intensive (4-5 days) development of a plan with communities. The following pilot villages were implemented more in line with the designated timing of activities (i.e. 1-2weeks between each visit) and was deemed more appropriate, though the revised approach is testing a 'middle ground'.

- The *CWSIP* is one of a suite of activities being implemented in communities through the NTNT project. NTNT staff have strong opinion that the project's Community Strengths Assessment (CSA), a strengths-based discussion which identifies community assets, is a useful precursor the *CWSIP* process as it helps identify the resources that can be mobilised during action planning. Similarly, the NTNT's Gender WASH Monitoring Tool is seen as another important precursor, promoting thinking about gender equality and social inclusion as a premise for improved water management.

- Two of the pilot villages had achieved total coverage of sanitation facilities after the NTNT project's facilitation of Community Led Total Sanitation (CLTS). NTNT staff expressed the opinion that CLTS before CWSIP, eliminates a significant water contamination pathway and sets a precedent for non-subsidised partnerships between community members and facilitators which is carried into the CWSIP process. Reducing community expectation for subsidised water improvements. The counter-argument to this that if CLTS programs do not sufficiently consider the implications of latrine construction and siting on water safety, shifts from controlled open defecation to fixed point defecation could in fact create new risks to water security. More work is required to investigate the timing between CLTS and CWSIP processes with different ordering being tested in the pilot communities.

- The *CWSIP* is seen as a great enabler for communities to take the lead in managing their water system but does not include practical trainings to improve technical skills. This is a key area of complementarity of SIG's *Community Engagement Guidelines* both in part (i.e. Caretaker training) or in full, seen to be particularly useful when community action plans reach the point of making either minor or major upgrades/repairs to their water system.

DISCUSSION AND CONCLUSION

While piloting continues, there is a strong sense from NTNT field staff, that the *CWSIP* guide is a powerful and useful tool for the WASH sector. NTNT staff recently trained in the use of SIG's *Community Engagement Guidelines*, reported that the *CWSIP* is an important and complementary supplement to the *Community Engagement Guidelines* that is focused on construction of water supply systems compared to the *CWSIP* which focuses on capacity development and engagement of community members to understand and manage their water system.

The piloting will continue in the first half of 2020, with a focus on comparing outcomes of the streamlined, revised approach being tested in two communities, with that of the original, more time intensive and detailed approach being piloted in four communities.

The incorporation of CSIRO's inputs to bring external climate predictions to complement community knowledge and understanding is envisaged to strengthen decision-making and lead to better water security outcomes by considering potential climate and population impacts on different water resources. This will also help bring a catchment-level perspective to community water management.

The refined *CWSIP* process should be available for publishing by June 2020 at which point it will be circulated within the Solomon Islands WASH sector and implementation across the 60 villages targeted by the NTNT project will commence. The capture of evidence and lessons will continue to be a focus of the NTNT project's delivery and further refinements of the tool and sharing of information will be a priority.

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REFERENCES

[1] SNAP SHOT Water Sanitation and Hygiene (WASH) Solomon Islands RURAL WASH

[2] https://data.worldbank.org/indicator/SH.STA.STNT.ZS?end=2007&locations=SB&start=2007

[3] http://www.who.int/gho/countries/slb.pdf?ua=1

[4] Solomon Islands National Development Strategy 2016-2035, pg 26.

[5] Solomon Islands National Development Strategy 2016-2035, pg 60.

[6] Seasonal use of multiple water sources builds community resilience in climate-vulnerable Pacific Island Countries, W, Hadwen, Griffith University, 2015

[7] MHMS, Rural WASH Baseline, 2015

[8] Ibid.

[9] https://sirwash.weebly.com/uploads/4/2/7/6/42764129/ce_mini_guide_2019.11.pdf

[10] UNICEF Pacific, 2018. Pacific WASH Resilience Guidelines: A practical tool for all those involved in addressing the resilience of water, sanitation and hygiene services in the Pacific.

[11] WHO, 2017. Climate-resilient water safety plans: managing health risks associated with climate variability and change. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO

[12] WHO, 2019. A guide to equitable water safety planning: ensuring no one is left behind. Geneva: World Health Organization. Licence: CC BY-NC-SA 3.0 IGO.

[13] Sustainable Water Partnership, 2017
[14] Chambers, R., 1981. Rapid rural appraisal: rationale and repertoire. Public administration and development, vol. 1, no. 2, pp. 95-106; Chambers, R. 1994a, 'Participatory Rural Appraisal (PRA): Analysis of Experience', World Development, vol. 22, no. 9, pp. 1253-1268; Chambers, R. 1994b, 'Participatory rural appraisal (PRA): Challenges, potentials and paradigm', World Development, vol. 22, no. 10, pp. 1437-1454.
[15] International Water Centre, https://watercentre.org/research/researchimpacts/pcwm/