

1 *Using vocational education to provide development solutions in the*

2 *Pacific: An emphasis on climate change and health*

3 • **Climate and health**

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29 **Abstract**

30 This article reports on the results of the EU PacTVET project, which explored the use of
31 Technical Vocational Education and Training (TVET) to provide a better understanding on the
32 development solution for the impact of climate change on human health in the region. It
33 describes the findings of a 2014-2018 project on the use of vocational education to provide
34 development solutions in the Pacific with an emphasis on climate change and health. An
35 exploratory design was used to investigate how vocational education developed solutions for
36 climate change and health in the 15 Pacific – African Caribbean and Pacific (P-ACP) countries:
37 Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Nauru, Niue, Palau, Papua
38 New Guinea (PNG), Republic of Marshall Islands (RMI), Samoa, Solomon Islands, Timor-Leste,
39 Tonga, Tuvalu and Vanuatu. Information collected via personal communication with relevant
40 stakeholders, qualitative interviews, documents review, and survey (n=48) of youths and young
41 women in Fiji. Data analysis was performed using thematic analytical strategy and frequency
42 analysis. The study found that vocational education plays a significant role in building the
43 capacity of people to become more sustainable and resilient in their life now and in the future.
44 Also, getting an accredited qualification on health resilience and/or job in the health sector may
45 help them to respond effectively and efficiently in the event of climate change and/or disasters
46 caused by natural hazards. The same factors were explored quantitatively using descriptive
47 analytical strategy, and concluded TVET education, to have a positive influence on climate
48 change and health. As a result, vocational education could provide development solutions for
49 health adaptation in the Pacific. These results indicate global actions for vocational education,
50 that would perfect the course of resilience for these 15 P-ACP in the Pacific and alike in the U.S.

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53 **Introduction**

54 Global climate change and disasters caused by natural hazards are known to affect many
55 sectors worldwide including the Pacific [1-11]. In the Pacific, these sectors may include but not
56 limited to agriculture, coastal management, energy and infrastructure, education, fishery, forestry,
57 health, tourism, and water resources [11-22]. As a result of these phenomenal impacts on all
58 levels of society for the people of the Pacific, all Pacific governments, Non-Government
59 Organisations (NGOs), regional and international organisations were then mandated to respond
60 to the regional countries, in order to enhance their sustainable development solutions to build
61 more resilient Pacific Islanders, by 2030 and beyond.

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63 Such a confluent for actions is significant to the livelihoods, health and well-being of the
64 people in the region, leaders in the Pacific then envisioned the birth of the EU PacTVET project
65 in August 2014 with an overall budget of EUR 6.1 million, as part of its worldwide contribution
66 to adapting to climate change (CCA) and hazards (DRR) and Sustainable Energy (SE)
67 development in the region. The program was specifically designed to enhance sustainable
68 livelihoods, thus strengthening countries' capabilities to adapt to the adverse effects of climate
69 change as well as enhancing their energy security at all levels in 15 Pacific Island Countries
70 (PICs): Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Nauru, Niue, Palau,
71 Papua New Guinea (PNG), Republic of the Marshall Islands (RMI), Samoa, Solomon Islands,
72 Timor-Leste, Tonga, Tuvalu and Vanuatu (Fig 1).

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Map created by Peni Hausia Havea (QGIS, 2018)

90 **Fig 1. Map of the 15 Pacific Island Countries who are participated in the EU PacTVET**
91 **Project.**

92 Source Authors
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95 The 10th European Development Fund European Union Pacific Technical and Vocational
96 Education and Training on Sustainable Energy and Climate Change Adaptation (European Union

97 PacTVET) project is component three within the broader regional Adapting to Climate Change
98 and Sustainable Energy (ACSE) programme. Both the EU and GIZ are EU PacTVET project
99 implementing partners. The project builds on the recognition that energy security and climate
100 change are major issues that are currently hindering the social, environmental and economic
101 development of Pacific – African Caribbean and Pacific (P-ACP) countries [23]. It is also the
102 first programme in the region to combine both resilience (CCA & DRR) and sustainable energy
103 in a single project.

104

105 In the Pacific, to date only the World Health Organisation [14, 24] and the Government
106 of Fiji through the Ministry of Health and Medical Services [25] have had programmes
107 emphasising climate change and health. The WHO report on “Human Health and Climate
108 Change in Pacific Island Countries” in 2015 focused on 13 PICs: Cook Islands, FSM, Fiji,
109 Kiribati, RMI, Nauru, Niue, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu. The
110 assessment was on vulnerabilities to the impacts of climate change on health and adaptation
111 strategies. Since Fiji was part of the WHO project in 2016, this led to the Government of Fiji
112 developing “Climate Change and Health Strategic Action Plan 2016-2020” for the Climate
113 Change Unit of the Ministry of Health and Medical Services (MoHMS). The other PICs are still
114 in the process of developing, their own national health adaptation plans. For example, The Queen
115 Salote Institute of Nursing and Allied Health in Tonga and the School of Nursing in Fiji are
116 planning to integrate climate change and health into their curriculum in the future.

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118 Since most of the climate change and health programmes are only available at the
119 graduate level (e.g. master and Ph.D. etc.) at universities like the University of the South Pacific

120 (USP) and Fiji National University (FNU), the deficiency of literature on this topic indicates that
121 it is currently under-researched. At the outset of the EU PacTVET project, there were no formal
122 vocational qualifications in this area, with ten of the fifteen countries the project is working in
123 having no functional national vocational educational quality assurance systems [26].
124 Significantly, the EU PacTVET project embarked not only to develop solutions for climate
125 change and health via vocational education by developing accredited qualifications on Health
126 and Resilience (CCA & DRR) from certificate level 1 to certificate level 4, it is also working
127 with the Educational Quality Assessment Programme of the Pacific Community on regional
128 accreditation on institutional verification so that the qualifications can, in theory, be delivered at
129 any TVET institution in the region.

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131 According to the Pacific Association of Technical and Vocational Education and
132 Training (PATVET) [27], 12 countries have vocational institutions: Cook Islands, Fiji, Kiribati,
133 Nauru, Niue, PNG, RMI, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu – and most of
134 these countries are USP members countries, where they also host the Pacific Technical And
135 Further Education (TAFE) course on Resilience programme in their regional campuses.
136 Additionally, since Fiji has more than 100 vocational schools/institutions and PNG more than
137 130, using the EU PacTVET project as a guide via its 15 PICs, it is expected that the vocational
138 education in these countries, as well as USP, could regionalize and/or revolutionise the
139 development solutions for climate change and health in the Pacific, especially at the grassroots
140 level such as primary, secondary and TVET education. The by-product of this initiative is that it
141 may not only help to fill in this gap in knowledge and needs for research in the region, but also

142 help to build Pacific Island communities that are more sustainable and resilient now and in the
143 future.

144 This may lead not only to perfect the course of climate change and health adaptation but
145 also contribute to the achievement of the Sustainable Development Goals (SDGs), which has
146 health as goal number 3 [28], the targets and objectives of the United Nations Framework
147 Convention on Climate Change (UNFCCC), Sendai Framework for Disaster Risk Reduction
148 2015-2030 and Framework for Resilient Development in the Pacific, by 2030 and beyond.

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150 **Methods**

151 **Methodology**

152 A mixed method approach, named explanatory design [29], was used to gather all the
153 quantitative aspects of the EU PacTVET project. This quantitative data was collected from the
154 15 Pacific – African Caribbean and Pacific (P-ACP) countries in the region where the project
155 was implemented. The quantitative data for the project was mainly from surveys, registration of
156 students in TVET institutions and health expenditure. The qualitative aspect of the project was
157 mainly information that was collected from personal communications, interviews and project
158 documents. The study approach was called explanatory [30] because this paper has relied heavily
159 on the quantitative aspect of the project.

160

161 **Data Analytical Strategy**

162 The data analysis used an explanatory design model [31]. For the quantitative data, the
163 analysis used frequency. The results of this analysis were then explored qualitatively using
164 thematic analytical strategy. As a result, the quantitative results were explored qualitatively and

165 vice versa in order to provide a better understanding of how to use TVET education to develop
166 solutions for health and climate change. The data analysis was performed using SPSS and r
167 studio.

168 **Results**

169 Based on the results of this project, the study found four development solutions that
170 TVET education has used to help people in the Pacific improve their capacity to address and to
171 prevent some of the worst impacts of climate change on health and ultimately their well-being.

172

173 **1) Using the TVET Education Model to Address Development Solution on Climate** 174 **Change and Health**

175 From studies across the 15 P-ACP countries, a key barrier to the development of the first
176 qualification on resilience and health is because of no formal vocational sector qualifications in
177 CCA-DRR (Resilience) prior to the existence of the EU PacTVET project. This has led to the
178 development of the EU PacTVET model to address this limitation. This has been done by
179 integrating health and climate change into certificate levels 1-4 for TVET education in resilience.

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181 Using the EU PacTVET project's state-of-the-art ideology, a climate change landscaping
182 model has factored health into this conceptual framework. This state-of-the-art idea was used to
183 develop a framework on climate change and health for the 15 participating countries, that not
184 only enhance the development solutions of their people in their respective countries but equip
185 them to achieve sustainable and resilient health and happy well-being now and in the future (Fig
186 2).

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215 **Fig 2. EU PacTEVT Model for Accredited Qualification on Certificate Level 1-4 on**
216 **Resilience and Health.**

217
218 Source Authors

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220 In this model, there were four main steps: 1) identification of climate change landscaping
221 (development solution – climate change and health); 2) climate change regime; 3) qualification
222 on resilience in health; 4) and achievement of healthy living, sustainable and resilient Pacific
223 Islanders (adaptation space), by 2030 and beyond.

224
225 1) Landscaping Climate Change and Health into Certificate Levels 1 to 4 in TVET Education

226 In this context, landscaping climate change and health may mean using the insight of
227 landscape dynamics to unfold challenges that are difficult to embrace empirically by formalizing
228 qualifications in the forms of accreditation and quality control for climate change and health in
229 certificate levels 1 to 4. As a result, it is the science of studying to better understand the
230 relationship between climate change and health, thus developing a solution that may contribute
231 to solving health problems in Pacific communities. This landscaping of climate change and
232 health for the region may represent the EU PacTVET project, since, it is the project, that
233 developed these qualifications to be recognized nationally and regionally by the national and
234 regional qualifications frameworks that are already in place.

235
236 2) Climate Change Regime

237 When the process of landscaping the qualification for climate change and health was
238 completed by the project, the next phase was to input it into the climate change regime. For the

239 purpose of this project, this was inputted in the form of niche or in the form of innovation to
240 endogenous factors such as the development of the curriculum for certificate levels 1 to 4 on
241 climate change and health and exogenous factors, such as the recruitment of a qualified course
242 coordinator to coordinate and facilitate this programme. In this project, the regime may represent
243 an organisation or TVET institution.

244

245 3) Climate Change and Health Qualification

246 Within the TVET institution or an organisation, the next phase of the model is the
247 delivery of the qualifications to the learners or to the participants as an output based on the
248 regime. These institutions are verified by regional accreditation agencies such as Education
249 Quality & Assessment Programme (EQAP) and/or Fiji Higher Education Commission (FHEC)
250 to deliver accredited-based qualifications. These accredited qualifications on climate change and
251 health are available for delivery by the 15 P-ACP countries that were part of this project. Some
252 of the countries started with this delivery in 2017. The qualifications were accredited because
253 they met the Pacific Qualification Framework (PQF) standards as well as international standards
254 like the Australian Qualification Framework (AQF) on certificate levels 1 to 4. Nationalization
255 of qualifications for primary and secondary education or certificate levels 1 and 2 on health and
256 climate change is significant because it reveals much more of an individual level of competency
257 to pursue and advance sustainability and resilience in life and/or the development solutions to
258 their own problems than just their academic prowess.

259

260 4) Adaptation Space

261 When the above-mentioned steps were completed, the final step is the outcome of
262 delivering these qualifications. The outcome here is that the participants who represent the
263 adaptation space will then be able to contribute, to providing solutions to their problems, be it at
264 the community level, church, work environment or at the national level. Health resilience and
265 adaptation space represents any solutions that people, who successfully completed the
266 qualification(s) developed by the project, may have or use to protect themselves and others from
267 the negative effects of climate change and hazards and then use their competency to shape their
268 roles in climate and health adaptation for the benefits of all people in the Pacific.

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270 Space may mean an adaptation space has been created for people in the Pacific to adapt
271 to the effects of climate change in variable ways, to live a healthy life, thus achieving a resilient
272 Pacific community by 2030 and beyond. Adaptation space may include time, space, money,
273 being innovative and efficient in how they adapt inter alia, in order to achieve their goal in life.
274 In summary, this is how the EU PacTVET project addresses the development solution for
275 climate change and health in the form of formalizing the qualification for certificate levels 1-4 in
276 resilience and health. For example, by the end of the training on resilience certificate level 4 at
277 the USP Pacific TAFE, the learner will be competent to work as a:

- 278 - Climate Change Officer;
- 279 - Community Liaison;
- 280 - Project Officer;
- 281 - National Disaster Management Officer;
- 282 - Climate Change Planning & Development Officer;

283 amongst others, thus contributing to improving the adaptation space in the region. Adaptation
284 space is the last phase of this climate change landscaping model because the adaptation is open
285 to all to pursue the best option available to them.

286

287

288 **2) Helping Pacific Countries to Incorporate Health and Climate Change in all Subjects**
289 **in the Primary and Secondary Education Curriculum**

290 The EU PacTVET project has been partnering with FHEC as one of its pilot areas for
291 delivering the qualifications. EU PacTVET relied on the FHEC policies and procedures to
292 initially develop and accredit the Regional Qualifications in Resilience (CCA and DRR). The
293 project has also contributed to the enhancements of the primary and secondary education systems
294 in the region in that some of the countries are planning to integrate climate change in all subjects
295 for their primary and secondary education curriculum. For EU PacTVET, this has been achieved
296 by partnering with GIZs Coping with Climate Change in the Pacific Islands Region (CCCPIR)
297 project. If this initiative is successfully implemented, the Pacific region will be the first region in
298 the world to streamline and/or teach climate change across all subjects at the primary and
299 secondary levels.

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301 For example, in Fiji, the Ministry of Education is planning to streamline climate change
302 in all subjects in primary and secondary education including industrial arts, home economics,
303 agricultural science, office technology, computer education (Fiji's Ministry of Education 2018,
304 personal communication, 21 March) accounting, social sciences, sciences, health study,
305 mathematics, inter alia (A Tamani 2018, personal communication, 8 March). It is expected, by

306 nationalizing and incorporating climate change and health into the school curriculum, it may help
307 to build capacity on climate resilience and adaptation on health for the 15 P-ACP countries, thus
308 guaranteeing a Pacific community that will be more resilient and sustainable by 2030 and beyond.
309 In doing so, coding (to assign a code (numeric value or theme) for classification and/or
310 identification of something (e.g. converting a message or text) in resilience in climate change
311 should also be integrated into the school curriculum. Coding is important because it closes the
312 gap between climate change and Information and Technology (IT).

313

314 **3) Using TVET Education to Address Gender Towards Better Health and Resilience**

315 The project also addressed gender equality – for women, girls and vulnerable groups (e.g.
316 people with disability, etc.) – with the aim of developing a solution to improve skills for
317 resilience and sustainable energy using TVET. From what is known in this project, although
318 male learners dominated the TVET sector, the proportion of female learners is increasing for
319 activities directly using the same learning medium to improve their well-being and to have a
320 sustainable and resilient life now, and in the future (Fig 3).

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333 **Fig 3. Number of students enrolled in TVET institution for 5 countries from years 7-13**

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337 For example, a study by the project on 48 youths from communities in Fiji has shown
338 that these young people chose climate change and health as their study priority if such a course
339 or programme were to be offered in their schools or TVET institutions (Fig 4).

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352 **Fig 4. Percentage of youths and young women who preferred to study climate change and**
353 **health, Fiji.**

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355 Although the project has allocated funding to address the needs of women, girls and
356 vulnerable groups to recognize their rights to education and equal opportunity to climate
357 resilience and adaptation on health, the Pacific community needs to highlight gender rights in its
358 human rights convention, in order to widen the Pacific democratic space and work towards

359 achieving SDG goal 5 on gender equality [32-35]. As a result, it will give not only respect for
360 human rights – to perform unwittingly – but also a right to TVET education, to contribute
361 significantly to gender equality, in achieving better health and resilience for the people of the
362 Pacific.

363

364 **4) By Helping Pacific People to Improve their Health Adaptation Strategies in their**
365 **Communities – to Restore Better Health and Well-being**

366 By giving formal education on climate change and health to the participating countries, it
367 is expected that this will help the people of the Pacific to improve their health adaptation
368 strategies in their communities to restore better health and well-being. This can be done in two
369 ways. First, is to work together with the PATVET members countries since there are at least 12
370 PICs in this programme. They can do this through their Curriculum Development Units, which
371 are mandated under the Ministry of Education – to improve basic knowledge and understanding
372 for children and young people. Second, is to leverage the level of awareness for the general
373 population. This can be done by integrating climate change and hazards into the census for these
374 PATVET members countries. These are very important assets for the people of the Pacific.

375

376 People who will be learning climate change and health at TVET institution to become
377 climate change officers, community liaison officers, project officers, national disaster
378 management advisors and/or climate change planning and development officers, will most likely
379 be more competent to live a sustainable and resilient life than those with an ad hoc adaptation
380 skill. This can be applied to those who have participated in any projects regarding climate change
381 impacts and adaptation strategies to coastal communities, since people will tend to have better

382 solutions, and know how to deal with their problems better than those who do not learn about
383 impacts of climate change on health and health resilience and adaptation [12, 13, 23, 36-40].

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385 As one of the participants from 'Ahau in Tongatapu, Tonga indicated when he was asked
386 to reflect as to what extent a better understanding of the impact of climate change on livelihoods,
387 health and well-being helps him as an individual, to prevent the risk of running into the same
388 problems now and in the future stated: "This is a very important question. There was another
389 important question, that pops up in the survey about recommending a policy proposal to
390 prioritize a national survey about the impact of climate change on livelihoods, health and well-
391 being in Tonga. To me personally, I think that is very important because we need to pass on this
392 knowledge and learn how to deal with these problems like our elders. That's how we are going to
393 minimise these problems. So, that's how I am going to help the next generations to come. Most
394 importantly, this project really gives me some sort of insights into how to look after my families
395 as well as my friends. As we speak earlier in our discussion today, we have been faced with this
396 problem for so many years, regarding our homes and in this village. But for me, it gives a lot of
397 better understanding how to deal with this problem better for now and in the future."

398

399 **Discussion**

400 **Training programme to focus on training experts in health adaptation**

401 From what is known in the Pacific region, no TVET institution has used their educational
402 programme to develop solutions for climate change and health. But this is an important solution
403 for the landscaping of climate change because vocational education can train people to become
404 experts in health resilience (CCA & DRR) at a lower level and their exposure to this level of

405 training at a young age, will help them to build a resilient Pacific community. This is reiterated
406 by the FRDP which identifies training and education, among other forms of human resources
407 development, as vital to developing resilient communities whose members can actively engage
408 in risk reduction activities and protect the interests of their most vulnerable population [41].

409

410 More importantly, this is the hallmark of building resilience in the Pacific – to empower
411 those to whom resilience matters, as Paul Farmer called it the pathology of power [42]. It is poor
412 and disempowered in the society, those who do not work, lack education and the inputs and
413 systems of support to protect themselves from the negative impacts of climate change and
414 hazards on their health in the region.

415

416 Seeing climate change and hazards in terms of frequency such as too many people were
417 affected in the Pacific is too limited an approach to the problems. There is also a need to look at
418 the social and economic conditions, cultural practices, religion and system of learning where
419 people can be trained on resilience to reach where they live and work or to safeguard living
420 “within their comfort zone”. To achieve this, training people on resilience in health through
421 vocational education should not only welcome all people at all levels of society but with a
422 purpose to determine the climate change determinant of health and to support the scaling up of
423 health security.

424

425 This intervention will break the health impacts cycle by empowering people’s solution to
426 adaptation and improving the footprint of sustainable living of those who will most likely be
427 affected in the sense of changing the reality when the impacts or when the problems are

428 happening. For example, by attending this training programme, people will be more competent
429 about how to live their life in their communities as well as more confident about how to save
430 themselves and others when there is a significant sea level rise or cyclones.

431

432 **Provide accredited qualifications on resilience in health**

433 As the Pacific is constantly affected by climate change and natural disasters caused by
434 natural hazards, vocational education in the region could come up with a common denominator
435 between TVET, climate change and health which is to provide accredited qualifications on
436 certificate levels 1 to 4 in Resilience (CCA & DRR). Significantly, this can be used by
437 vocational education as part of their climate change regime to 2030 and beyond by creating more
438 jobs that are secure and improving the conditions of employment that will lead to improvement
439 in health adaptation and resilience. The EU PacTVET project can provide this competency-based
440 education model to help the 15 P-ACP countries to meet not only education-related goals but to
441 also address the shortages of skilled workers that are emerging to improve both health economics
442 and resilience.

443

444 This is why the project made a significant partnership with the global leader in health
445 such as WHO regional office in Suva, and regional health leader such as the Ministry of Health
446 and Medical Services Department of Climate Change, School of Nursing and the School of
447 Public Health at the Fiji National University in Fiji in developing these resilience and health
448 certificates, to ensure that these sustainable goals will be met by 2020 and beyond. Most
449 importantly, the consultant for the development of these resources were purely Pacific Islanders

450 people, who are well-versed with Pacific culture and heritage and health problems facing the
451 people in the region.

452 The EU PacTVET project is the first to establish a professional association for resilience
453 practitioners: The Pacific Regional Federation of Resilience Professionals (PRFRP) [23].

454

455 This Federation, along with relevant stakeholders like USP, should build capacity
456 regionally to allow the implementation of the SDGs, UNFCCC and the Sendai Framework
457 instruments through grassroots and up to management level. By investing in people’s knowledge
458 and their will to provide safer and more secure environments for their families, friends and
459 visitors alike, it is believed that this intervention may turn the tide for resilience in the Pacific
460 and be able to change how people live and work, thus building more sustainable Pacific
461 communities now and in the future. Clearly, by its very nature, “vocational” education is linked
462 to employment. However, in small Pacific island communities, paid employment is not the norm,
463 therefore, the Resilience qualifications work at the grassroots level by providing training for
464 “productive activities” within the community which will improve resilience, livelihoods, health
465 and well-being. One example of such community activities would be training to ensure the
466 production of safe drinking water – solar water disinfection (SODIS).

467

468 SODIS is a process of using solar energy from the sun to destroy the pathogenic micro-
469 organisms that cause water-borne disease so that the drinking water treatment can be available at
470 a low-cost solution at the household level [43]. The project was implemented in South Tarawa,
471 Kiribati by the Global Climate Change Alliance: Pacific Small Island States project. SODIS uses
472 readily available resources i.e. sun, 1.5 litres plastic PET bottles and roofing iron to disinfect

473 water, thereby ensuring sustainability of the skills imparted. Communities in South Tarawa were
474 trained in SODIS and awareness activities included the distribution of starter packs and
475 educational games specifically designed for children. SODIS was launched in October 2014 and
476 by February 2015 76% of households in the target communities were using SODIS. The
477 communities reported:

- 478 • positive effects including decreases in diarrheal disease especially in children under 5
479 years old;
- 480 • fewer days of school missed;
- 481 • decreased spending on kerosene for boiling water;
- 482 • better tasting and smelling water compared to boiling water;
- 483 • the health clinic servicing the communities also reported decreased incidences of
484 diarrhoea and respiratory illness [43].

485 SODIS training is needed by most communities in the Pacific who have to deal with lack of safe
486 drinking water on a daily basis.

487

488 This can be easily achieved by vocational education in the Pacific because resilience
489 education is a route to better chances in life. Fundamentally, if people chose to pursue better
490 chances in life, then it can be translated into better health outcomes because this has been proven
491 in other areas of life in the Pacific where people have been dealing with cyclones and sea level
492 rise. By training people in the region to be more climate and disaster resilience may not only help
493 them develop innovative solutions to build resilience in health to climate change and disaster
494 caused by natural hazards but also to be revolutionized in turning these threats or impacts into a
495 multipath embedded opportunistic resilience [44, 45].

496

497 For example, as a management level, a person with a degree in economics in Tonga may
498 know more about the Tongan economy than health, climate change and hazards for that matter.
499 If the same person enrolled in the course on resilience and health, this person will be exposed to
500 health, climate change and hazards education and will also be able to make an association to
501 economics in order to achieve better livelihoods, health and well-being for his or her family.

502

503

504

505 **Vocational education is a stepping stone to regionalize and nationalize climate change and**
506 **health at primary and secondary levels to develop a sustainable solution for the future**

507 If the Pacific is planning to regionalize and nationalize climate change at the vocational
508 education level now and in the future, then this needs to be acknowledged and climate change
509 and health needs to be considered in a different way to exert leadership and take forward global
510 action on addressing climate and health in the region. The best way to do this in the vocational
511 education sector is to use it as a platform as well for the primary and secondary schools to
512 develop a sustainable solution for the Pacific community, thus helping to build resilient Pacific
513 Islanders and communities by 2030 and beyond. From what is known in the region, people's
514 health suffers because of the impacts of climate change on their health in where they live and
515 work [14] and due to lack of support from the education sector. The end goal of the EU
516 PacTVET project and its PRFRP – and its follow up – is to change this reality.

517

518 The task of the EU PacTVET programme is not only to identify and support the
519 application of climate change and health interventions that will do the most to improve the
520 climate change conditions that determine health for the people in the region, but also to help the
521 vocational, primary and secondary education sector progress towards that ideal. These climate
522 change and health adaptation strategies do not just impact on children or young people mortality.
523 Rather they have a powerful impact on adult mortality as well, so powerful that a poor person at
524 the age of 12 in Vanuatu or Tonga has far fewer years in front of him/her than a poor person of
525 the same age in the United State of America (USA) with the same impacts of climate change on
526 their health. In doing so, not only does the education sector change the impact cycle of climate
527 change on health, but it will also help the people of the Pacific to improve their health adaptation
528 strategies in their communities – to restore better health and well-being.

529
530 As Queen Salote Tupou III of Tonga stated: “ ‘Oku ‘auha hoku kakai he masiva ‘ilo (the
531 demise of my people is caused by lack of knowledge). This may have been meant for the people
532 of Tonga, but this conceptualisation of knowledge is universal and as a result, it can be applied to
533 other Pacific Islanders as well. The same advice was given by Hosea 4:6 in the Bible that “My
534 people are destroyed for lack of knowledge. Because you have rejected knowledge, I also will
535 reject you from being My priest. Since you have forgotten the law of your God, I also will forget
536 your children” [46].

537
538 Importantly, in the Pacific in terms of climate change, health and religion in the region.
539 However, the EU PacTEVT project has responded to this call and will tackle the Pacific lack of
540 knowledge on climate change and health using this new regime. This regime may not only

541 increase the adaptation space for wisdom, skill and knowledge-base for basic education on
542 climate change and health Pacific-wide but will have impacts on other sectors as well
543 (agriculture, coastal management, energy and infrastructure, fishery, forestry, tourism, water
544 resources) since they are interrelated, thus helping vocational, primary and secondary education
545 to develop more sustainable resilience solutions for the future.

546

547 **Conclusion**

548 Using vocational education to provide development solutions in the Pacific on health and
549 climate change is new. As a result, there is an opportunity here for the EU PacTVET project to
550 follow through and change this reality once and for all in order to model the degree to which the
551 Pacific society delivers a good life to its citizenry. If the higher education sector already proved
552 it to the world that their strategies worked, then this process should be completed by using the
553 bottom-up approach so that the adaptation strategies process can benefit all levels of society (e.g.
554 streamline climate change and health at primary, secondary and vocational education). In doing
555 so, not only will it landscapes climate change in a way that has never done before, but it will
556 create ownership of the climate change regime and benefit the adaptation space of the Pacific
557 community at large.

558

559 There are three ways to achieve this goal. First, is to design a training programme that
560 focuses on training experts in health adaptation through vocational education. This is the best
561 solution that TVET education could provide for climate change and health regarding their
562 participants as students. Second, after designing the training programme to focus on climate
563 change and health, the next phase is to ensure that they get a job. Meaning the programme should

564 be able to provide accredited qualifications on resilience in health to work as climate change
565 advisors or consultants inter alia in their own countries. This is very important for the people in
566 the region because there are two-way benefits: health and economy. Thirdly, when the vocational
567 education is manageable with its programme in situ, the last phase is to help regionalize and
568 nationalize climate change and health at primary and secondary levels for the region to develop
569 more sustainable resilience solutions for the future. Since the Pacific is the most vulnerable
570 region in the world to be affected by climate change and disasters caused by natural hazards,
571 therefore without any doubt, this is the way forward that should be engaged in order to change
572 this reality and reverse this impact of climate change on health.

573 To ensure that this intervention is achievable for the Pacific, based on the result of the EU
574 PacTVET project, this paper recommends the following policy proposals for the region:

- 575 1) to integrate climate change and health into the Pacific vocational education
576 curriculum;
- 577 2) to integrate climate change and health into the primary and secondary schools
578 curriculum in the Pacific.

579

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584

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LANDSCAPE CLIMATE CHANGE AND HEALTH

- 1) Educational Quality Assurance and Accreditation of Developed Qualifications
- 2) Climate Change and Health Qualifications – Health Resilience Certificate 1-4



REGIME

- Curriculum
- Course coordinator
- Training programme on resilience and health
- Recruitment of participants to take the course



Output

QUALIFICATION

- Accreditation Certificate Levels 1-4



HEALTH RESILIENCE AND ADAPTATION SPACE

- Resilience and Health Climate Change Officer
- Community Liaison
- Project Officer
- National Disaster Management Officer
- Climate Change Planning & Development Officer

EU PACTVET PROJECT

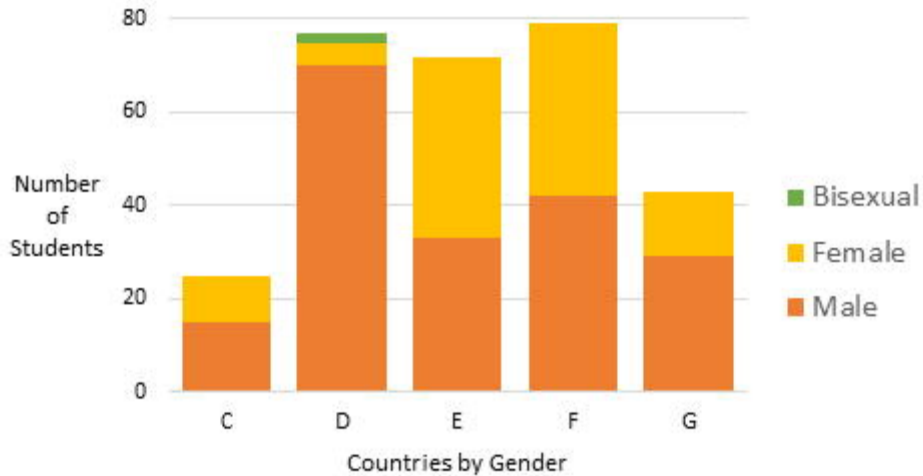
TVET INSTITUTION

- Verification of institution delivery (EQAP/FHEC) to ensure that institutions are able to effectively deliver the qualifications

EQAP – Educational Quality & Assessment Programme
FHEC – Fiji Higher Education Commission

PACIFIC COMMUNITIES

- Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Nauru, Niue, Palau, Papua New Guinea (PNG), Republic of the Marshall Islands (RMI), Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvalu and Vanuatu



Health

33.3(8.32)

36%

40%

24%

Mean (SD)

1st preference

2nd preference

3rd preference

Percent

100

75

50

25

0