



Cost-Benefit Analysis (CBAs) in the Pacific

NAP process and the P-CBA initiative

UNFCCC LEG-NAP Workshop

3-7th November, Vanuatu



2. This presentation

1. What is a CBA?
2. Role of CBA in decision making processes
3. Potential role of CBA in the NAP process
4. Example
5. P-CBA Initiative



Economic analysis functions in government processes:

- Budgetary Planning (Overall national and sectorial)
- Project proposals appraisal and selection
- Investment planning and implementation
- Regulatory frameworks for development control (such as EIA, standards etc.)
- Policy planning and implementation

Economic analysis in regional processes:



CBA Work Programme



3. CBA What is it?

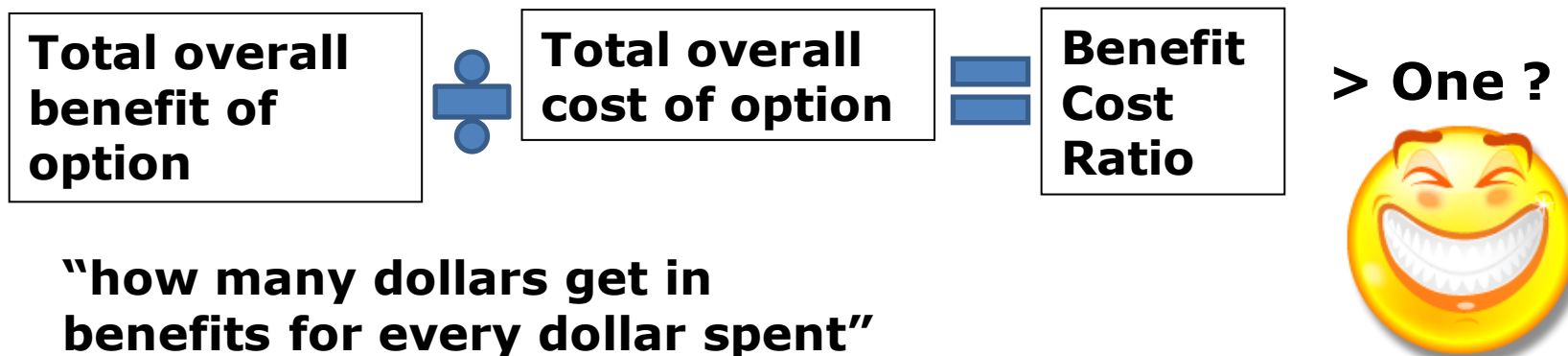
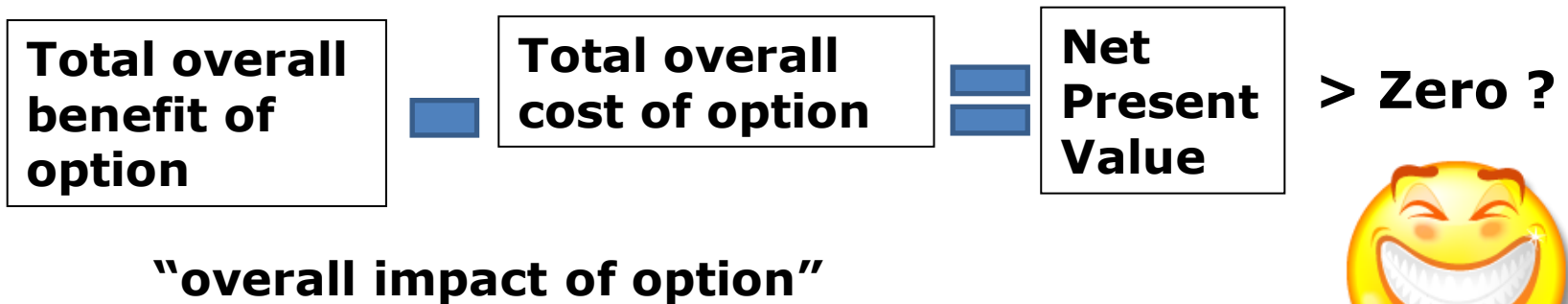
Framework to assess the merits of a project or policy from the perspective of society (not a single individual or firm)

Essentially involves:

- Measuring the gains and losses ('benefits' and 'costs') from a project or activity to the community using money as the measuring rod
- Summing those monetary values of the gains and losses and expressing them as net community gains or losses

	Financial analysis	Economic (CBA) analysis
Definition of “a project”	“the origin of a series of cash flows that take place over different time periods”	“the origin of a series of costs and benefits that take place over different time periods”
Aim of analysis/ questions answered	<ul style="list-style-type: none"> • What is the series of cash flows each year? • What is the overall profit to the firm or individual? 	<ul style="list-style-type: none"> • What are the costs and benefits each year? • What is the overall impact “net present value” on society (environment and whole population)? • Do different groups in society get affected differently?
Indicators used	<ul style="list-style-type: none"> • Profit 	<ul style="list-style-type: none"> • Net Present Value (NPV) • Benefit Cost Ratio (BCR)

NPV versus BCR





4. What it is used for?

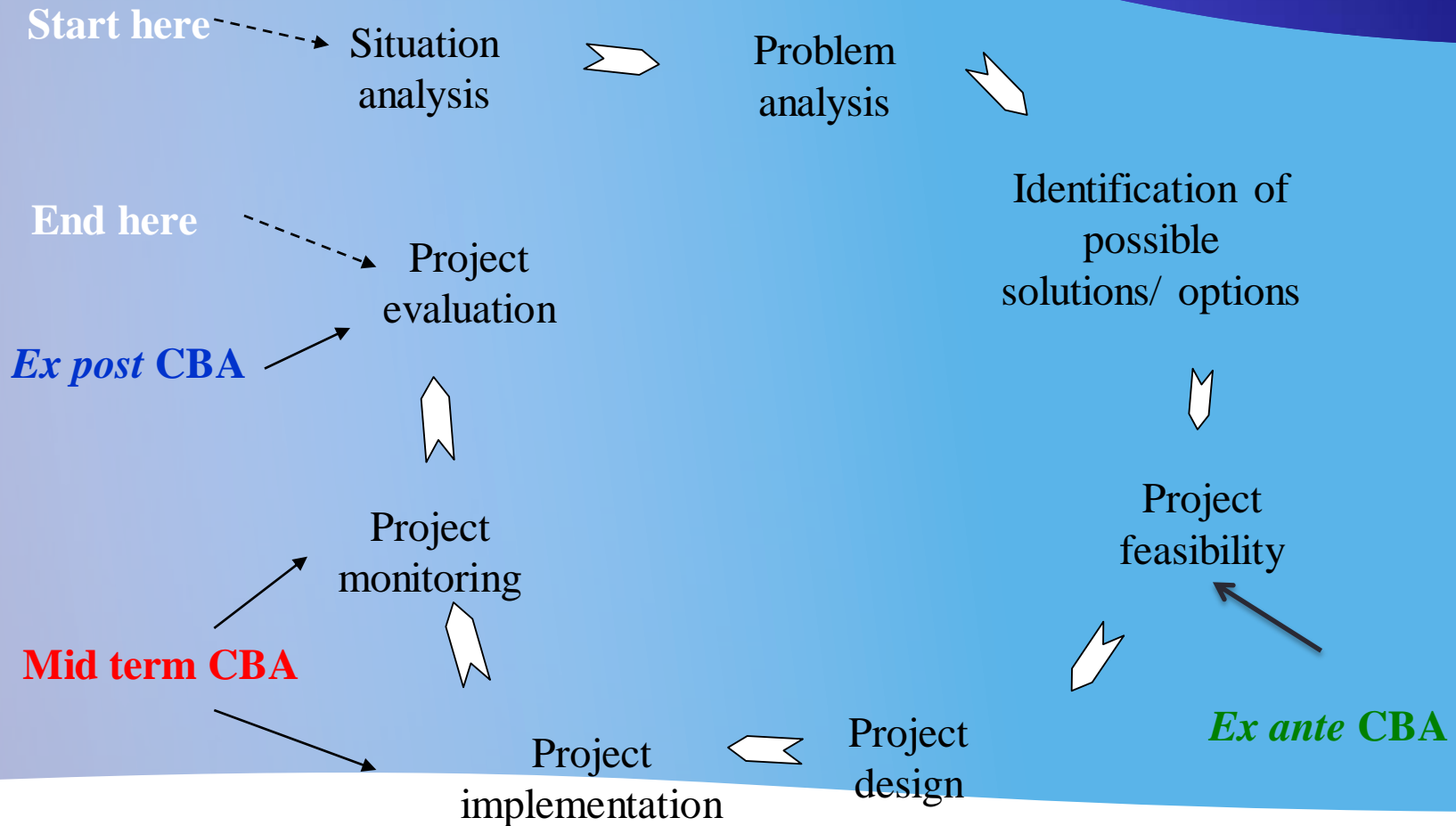
1) Decision making **before** doing project (ex-ante):

- How should we implement the project/which activities should we choose to do?
 - Which of the possible solutions will give us the best pay off per dollar invested?
 - Which will generate the highest value to society once we have paid for it?
- Is the project or activity worthwhile overall?
 - Should we invest in this project?

2) Project assessment **afterwards** (ex-post):

- Has investing in this project been worthwhile?

5. Life in the project cycle?





MARSHALL ISLANDS

Water Sector Pilot Demonstration Project

Island Type: Low Lying Atoll

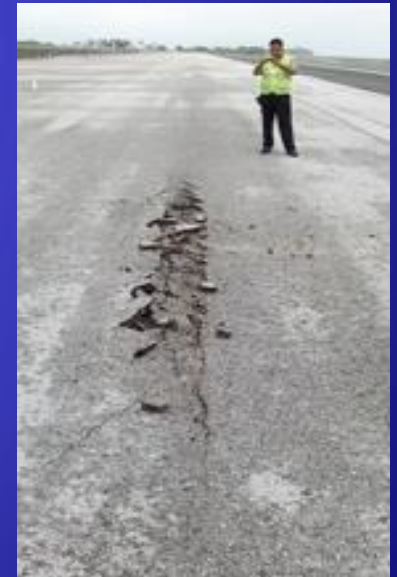
Total Pop: Approx 58,800

Project CBA - example

help chose between alternative solutions/project options or define optimal combination of options

RMI – airport water management

0. Do nothing
1. Repair distribution pipe
2. Reline airport reservoir
3. Cover airport reservoirs
4. Improve efficiency of airport catchment
5. Expand runway catchment
6. Increase households with rainwater systems



To ensure and to provide assurance that option is effective/efficient and thus worthwhile investment

Sensitivity Analysis

Option	Baseline	Demand	Value	Drought	Rainfall	Efficiency	Lifespan
1	8.78	8.78	9.23	16.89	8.78	8.78	8.59
2	0.97	0.97	1.01	1.90	0.97	0.97	0.87
3	15.97	15.97	16.71	33.23	15.97	44.18	15.97
4a	0.002	0.002	0.031	0.002	-0.013	0.002	0.002
4b	0.36	0.36	0.60	0.36	0.36	0.82	0.36
5a	1.98	2.67	3.36	1.98	1.98	0.59	2.33
5b	0.75	1.45	2.14	0.75	0.75	-0.64	-0.75
6a	3.38	3.38	3.59	8.24	2.71	6.03	3.38
6b	14.66	14.66	15.42	32.36	12.24	24.30	14.66
6c	20.76	20.76	21.83	45.82	17.33	34.41	20.76

Recommendations for \$0.8M PACC Project

- * First:

1. Fix pipes (even just a portion)

- * Then:

1. Install evaporation covers

- * All tanks (B:C 18.9, NPV \$6.9M; Cost = \$0.39M)

2. Reline

- * tank 4 only (B:C 5.2; NPV \$8.6M; Cost = \$0.13M)

3. Repair cracks in existing runway

- * (B:C 3.6; NPV \$0.4M; Cost = \$0.14M)

4. Expand airport

- * geomembrane (B:C 3.5; NPV \$2.0M; \$0.8M)

Outcome 2.1: Increased water security in RMI in times of drought through demonstration measures to improving water retention

Output 2.1 Demonstration project delivered to improve RMI airport water storage system

Indicator(s): The reservoir capacity has been increased from 32 million gallons to 36.5 million gallons (approximately 138 million litres). Covers have also been fitted to the tanks, reducing loss from evaporation; Water access (hrs per day in DUD)

Results:

- percentage of water retention in the reservoir increased from 50% to 80%.
- 100% of water retention from the 3 renovated tanks.
- Customer satisfaction with increased access to water from 2-3 hours per day to 8 hours/day
- Water reservoir during drought situation improved from 3-4 weeks to 3-4 months

Lessons & Practices:

Use legal instruments to consolidate implementation activities

MoUs, TORs, Contracts, tender bidding processes, etc

Conduct assessments to make informed decisions. e.g V&A, CBA

6. A mainstreaming tool?

- Supporting budgetary planning, project appraisal and planning processes
- Possibilities of sectoral analysis
- Clear and transparent way to integrate Climate Change into decision making process;
- Analyse how CC can affect benefits and costs of our decisions;
- Take into account CC uncertainty using sensitivity analysis;
- Analyse how the impact of a project can affect different strata of the society (Gender and stakeholders analysis).

CBA and the NAP process

Essential Function 6:
Appraising adaptation options
to support decision-making on
adaptation investment plans and
development planning;

TABLE 1. STEPS UNDER EACH OF THE ELEMENTS OF THE FORMULATION OF NATIONAL ADAPTATION PLANS, WHICH MAY BE UNDERTAKEN AS APPROPRIATE^a

ELEMENT A. LAY THE GROUNDWORK AND ADDRESS GAPS

1. Initiating and launching of the NAP process
2. Stocktaking: identifying available information on climate change impacts, vulnerability and adaptation and assessing gaps and needs of the enabling environment for the NAP process
3. Addressing capacity gaps and weaknesses in undertaking the NAP process
4. Comprehensively and iteratively assessing development needs and climate vulnerabilities

ELEMENT B. PREPARATORY ELEMENTS

1. Analysing current climate and future climate change scenarios
2. Assessing climate vulnerabilities and identifying adaptation options at the sector, subnational, national and other appropriate levels
3. Reviewing and appraising adaptation options
4. Compiling and communicating national adaptation plans
5. Integrating climate change adaptation into national and subnational development and sectoral planning

ELEMENT C. IMPLEMENTATION STRATEGIES

1. Prioritizing climate change adaptation in national planning
2. Developing a (long-term) national adaptation implementation strategy
3. Enhancing capacity for planning and implementation of adaptation
4. Promoting coordination and synergy at the regional level and with other multilateral environmental agreements

ELEMENT D. REPORTING, MONITORING AND REVIEW

1. Monitoring the NAP process
2. Reviewing the NAP process to assess progress, effectiveness and gaps
3. Iteratively updating the national adaptation plans
4. Outreach on the NAP process and reporting on progress and effectiveness

CBA and the NAP process



Quantitative ex-post CBA?

Qualitative CBAs to review the design of specific activities or sector plans?

Quantitative Ex-ante CBA of Sectoral Plans or specific interventions

In detail:
Integrating adaptation costing and benefits into sector plans and public investment plans through micro-economic analysis of policy instruments (against criteria such as efficiency, equity and political acceptability)

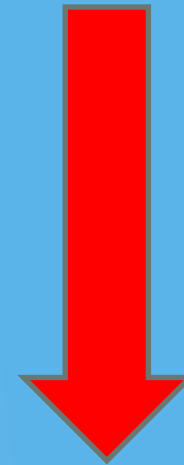
10. The P-CBA initiative

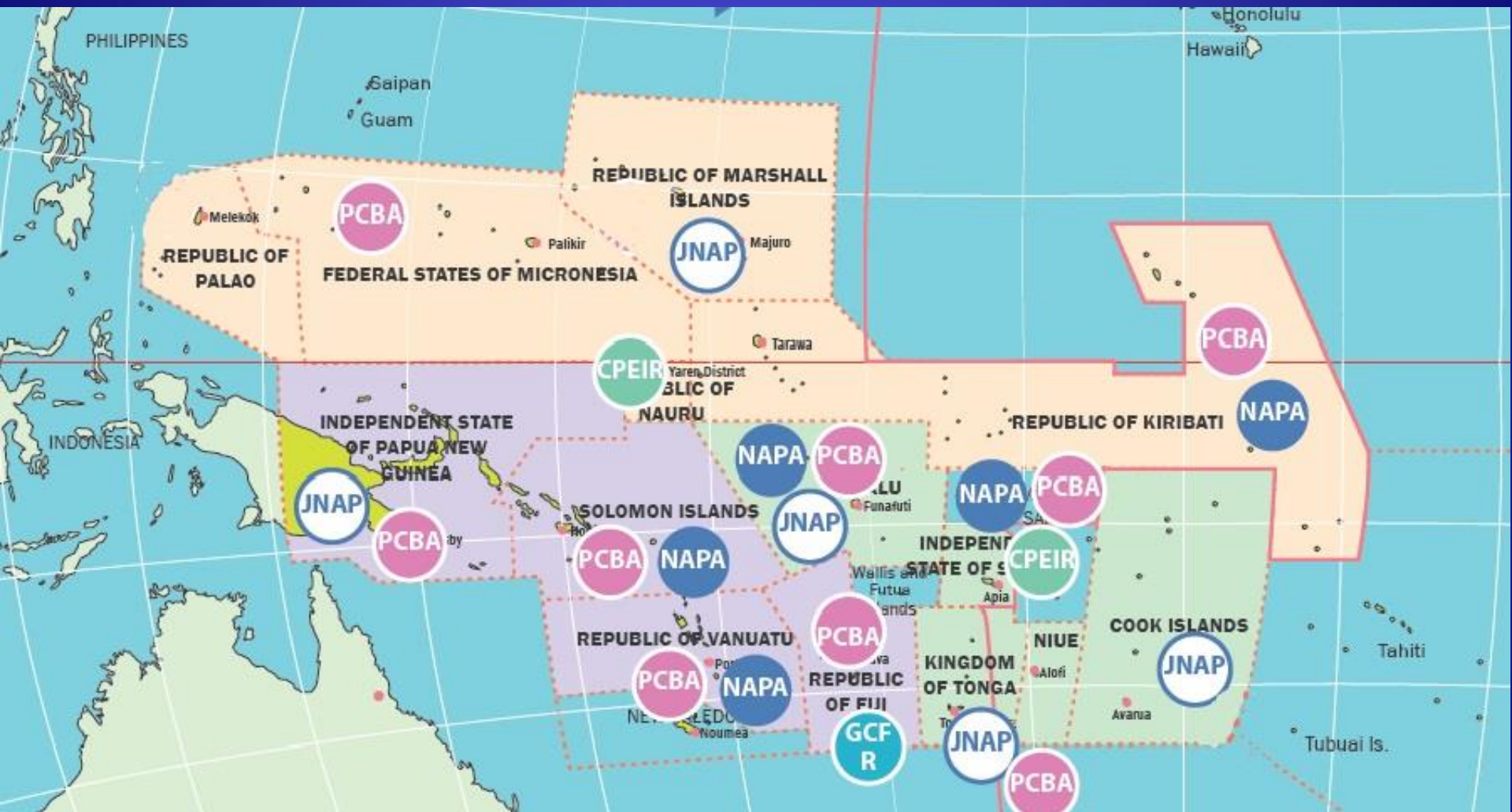
P-CBA Overview:

P-CBA is a multi-agency initiative that aims to enable governments to better prioritise, design and implement their projects and policies to more effectively and efficiently achieve development, taking into account climate and disaster risks. Part of global UNDP programme on Economics of Climate Change Adaptation.

How?

1. Planning Meeting;
2. In-country trainings (**Learning by doing approach**);
3. Conducting CBA of on-going initiatives;
4. Technical Backstopping/Mentoring;
5. Integration of CBA into government processes;
6. Facilitate Knowledge Sharing on CBA in the Pacific and between similar regional initiatives.





Training Structure

Modules available:

-Policy makers course:

0.5 days, overview of CBA and its role in decision making processes

Target: senior government officials and policy makers

-ABC of CBA:

2.5 days, basics of CBA and Excel exercises

Target: mid-level government officials

-Workplanning Session:

1-2 days, develop a preliminary CBA to be completed after the course with technical support/mentoring from the P-CBA team.



Planning Meeting Outputs

Lessons Learnt

1. Need for a systematic regional approach and tailored in-country trainings,
2. Concrete case studies application in support of on-going initiatives and
3. Integration of CBA into government processes and sustainability strategies,
4. Attach the initiative to a formal institution.



Sustainability of the initiative

The role of USP

- Given its existing capacities and its strategic position in the region, countries indicated USP as the key partner for the delivery of P-CBA.



Proposed Partnership Agreement:

- Faculty of Business and Economics: Certification of the trainings and delivery of trainings;
- PACE SD: Revision of training materials on the integration of Climate Change risks;

Integration of CBA trainings in USP summer courses, BSc and MSc



Schedule 2014

Currently:

- **August 2014** – Fiji Training. 60 participants, 4 case studies identified: (relocation, flood risk reduction, waste management, road safety).
- **October 2014** – FSM training. 25 participants 2 case studies identified: (road relocation, water improvement project).
- **November 2014**- Samoa and Vanuatu training



Schedule 2015

2015:

- **February:** Tuvalu, Fiji Follow Up with GCF Readiness Programme
- **March – June:** Tonga, Solomon Islands

Other P-CBA countries (TBC) for training: Kiribati, PNG

Additional countries to join: open