Building Resilience/Adaptive Capacity through Social Collaboration in Community DRR and Learning Programs

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Synopsis/Introduction (1)

- Policy makers and other city stakeholders look for sustainability solutions to urban problems

- To meet these sustainability challenges requires bringing together of all forms of capital through collaboration in an effort to building capacity of the stakeholders.

- The SDGs (Goal 17) although does not mention collaboration directly, calls for "revitalize the global partnership for sustainable development".

Synopsis/Introduction (2)

- Collaboration is seen as process of interactions.

- Collaboration consists of several stages.

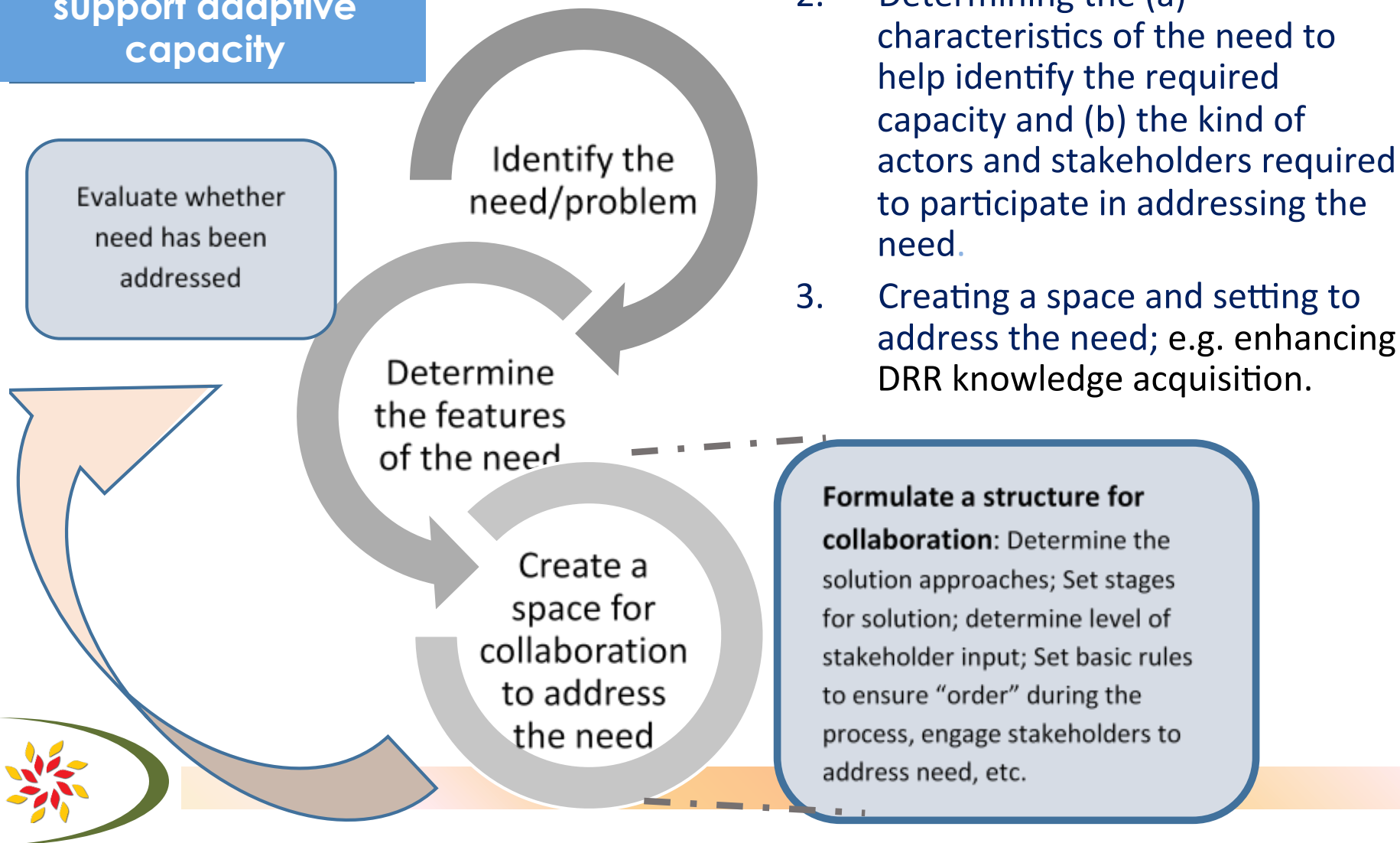- Collaboration is characterized by principles.

Objectives

- To provide insight into the *principles* of developing a structure that can enable collaborative processes to support citizen and/or community resilience/adaptive capacity building using DRR or education programs.

- To demonstrate how the case studies on 3 projects/initiatives highlight collaboration.

Fig. 1: Developing a structure to create space for collaboration & to support adaptive capacity

Evaluate whether need has been addressed

Identify the need/problem

Determine the features of the need

Create a space for collaboration to address the need

Formulate a structure for collaboration: Determine the solution approaches; Set stages for solution; determine level of stakeholder input; Set basic rules to ensure "order" during the process, engage stakeholders to address need, etc.

1. Common or mutual identification of a need to be addressed and delineating the relevant target group(s).

2. Determining the (a) characteristics of the need to help identify the required capacity and (b) the kind of actors and stakeholders required to participate in addressing the need.

3. Creating a space and setting to address the need; e.g. enhancing DRR knowledge acquisition.

Case Studies

CASE 1

The Indonesia River Restoration Movement (IRRM), Yogyakarta City: Community based river restoration of River Code in the city using ESD based multi-stakeholder collaboration and networking

Case 1: The Indonesia River Restoration Movement (IRRM)

- **The IRRM case** provides an example of practical learning using collaboration to restore the integrity of a river (Code River) and for flood prevention.

- **The problem** is polluted Code River in Yogyarkarta and many riverine towns and cities in Indonesia.

Encroachment on the flood plain

Treatment Rivers as Waste Disposal sites

Most of the slides used in this Case by courtesy of Dr.-Ing. Ir. Agus Maryono of UGM Indonesia

Case 1: IRRM Approaches

- Active participation of 1) researchers from various departments of the University of Gadjah Mada; 2) the local communities and leaders.

- Several collaboration approaches:
  - **Community Based Approach:** SDGs
  - **Systematic Approach:** Involve all Stakeholders
  - **E-communication Approach:** Fast, Cheap
  - **Networking Approach:** Connecting each group; suits large, archipelago regions
  - **Knowledge Based Approach:** ESD, Book and River School

River School organized by IRRM

Case 1: Successful and significant results

- Managing garbage in the Code river

- In relation to flood mitigation, development of Social Early Warning Systems by updating the hydro meteorological condition along rivers

- Participation and promotion of IRRM in other regions

- Participation and interest for River School has been very high

- Initiators of the project have also been awarded

Result: Restored rivers
Code River 2014 –Now (2016)
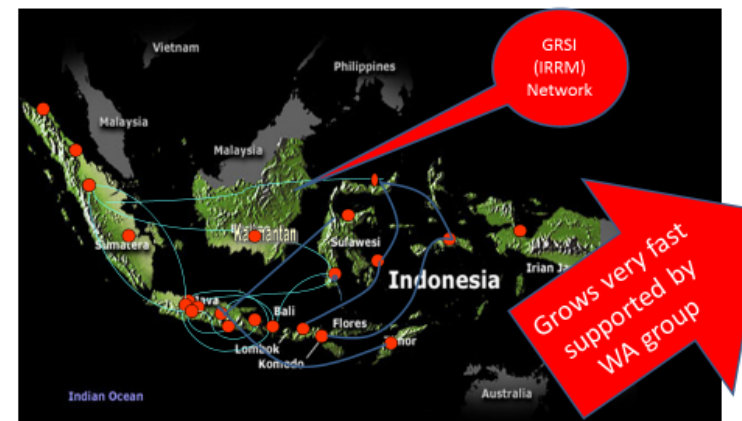
Children play rafting, Because of love

Case 1: Upscaling of collaboration-networking related projects

- The project is currently operating in more than 50 communities with plans to replicate and upscale it to cover the whole Indonesian Archipelago.

- River Schools have increased to 14 in 2016 and continues to grow.

- Further development of **a road map** of IRRM project from 2017- 2025 is receiving multi-level support.

This case is an example of use of community participation and collaboration to address disaster mitigation and prevention.

Development of IRRM NETWORKING in more than 50 Communities, 2016

Grows very fast supported by WA group

Develop Road Map of IRRM 2017- 2025

Supported by Community, Local and Central Government, University and Private Sectors in Indonesia

2017:
Establishment of river communities at **34** provinces and enlarge the network **to 30 %** of District.

30 % river is clean and health, kept by community

2020:
Establishment of river communities at **34** provinces and enlarge the network to **50%** District regions

40 % river in Indonesia clean and health, kept by community

2025: Establishment of river communities at 34 provinces and enlarge the network to **75%** District

75 % of river in Indonesia clean , health and productive , kept by community

Case 2

- **CASE 2A:** Sendai City, Japan: Bi-level DRR Collaboration - Strengthening of Sendai City DRR Management

- **CASE 2B:** Miyagi University of Education staff and students collaboration with victims of the GEJE disaster nearby Coastline cities

CASE 2A: Strengthening Sendai City DRR Capacity through collaborative governance (1)

- **Establishment the Sendai City Regional Disaster Prevention Plan:** Specifies the roles of the appropriate local institutions.

- **Creation of the position of Crisis Management and Disaster Prevention Director,** who is responsible for crisis management and assists the mayor.

- **Mechanisms for cooperation with related organizations** such as Miyagi Prefectural Police Department and the Self Defence Forces.
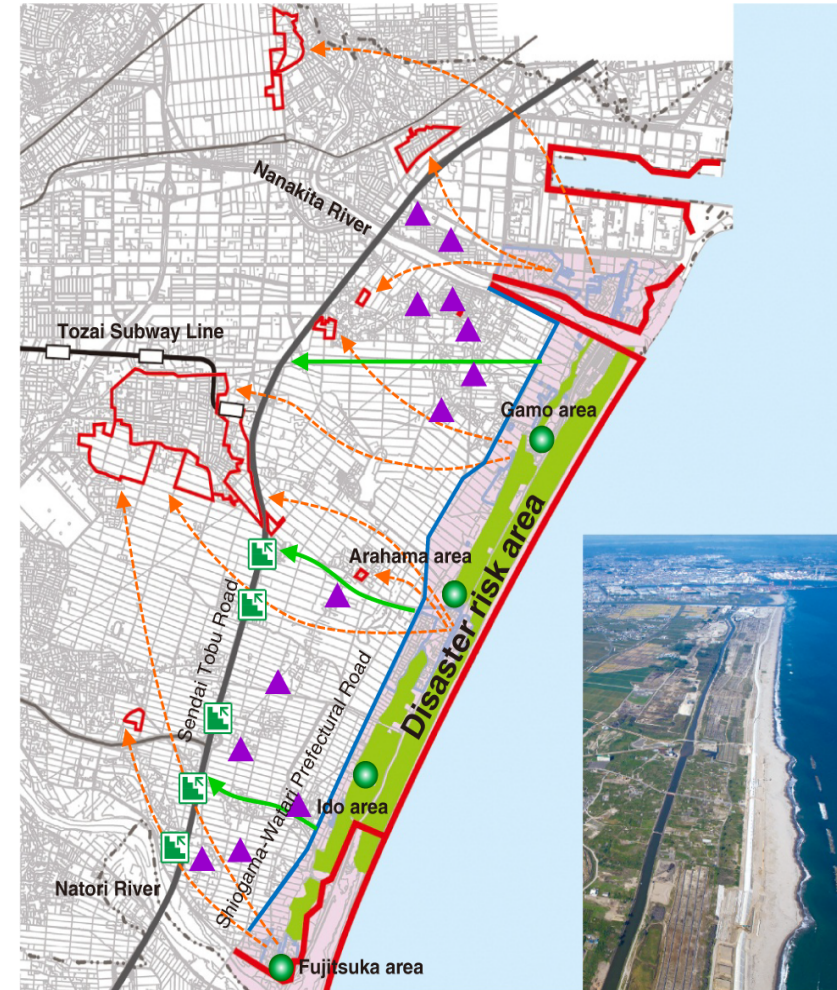
Bird's-eye view map

Nanakita River

Tozai Subway Line

Gamo area

Arahama area

Sendai Tobu Road

Disaster risk area

Shiogama-Watari Prefectural Road

Ido area

Natori River

Fujitsuka area

Photo taken in September 2015

Coastal embankment, river embankment, etc.　　Elevated road　　Evacuation hills　　Evacuation facilities

Coastal disaster prevention forest　　Disaster risk area (Inland relocation)　　Inland relocated residential area

Evacuation roads　　Disaster prevention collective relocation movements　　Evacuation stairs

CASE 2A: Strengthening Sendai City DRR Capacity through collaborative governance (2)

Development of infrastructure:

- Revamping of the city's sewerage system to handle once-in-a-decade torrential rains.

- **Improvement in minimizing damage** to water and gas supply facilities; reinforced school buildings, etc.

- **Disaster prevention training** at elementary schools, a system of sending warnings on tsunami, etc

This case is an example of collaboration (governance) to address disaster recovery, mitigation and prevention.

Bird's-eye view map

Photo taken in September 2015

- ▬ Coastal embankment, river embankment, etc.
- ▬ Elevated road
- 🟢 Evacuation hills
- ▲ Evacuation facilities
- ▬ Coastal disaster prevention forest
- Disaster risk area (Inland relocation)
- ▭ Inland relocated residential area
- ⟵ Evacuation roads
- ⤍ Disaster prevention collective relocation movements
- Evacuation stairs

CASE 2B: MUE–Community Collaboration on DRR Recovery & Resilience Building in nearby coastline cities

- Miyagi University of Education (MUE) suffered significant infrastructural damage at the time of the GEJE and a considerable number of students suffered emotional distress because they hailed from the affected areas.

- Students participated a number of activities.

- Result: Stronger social interaction between the university community and the local communities.

This case provides an example of use of collaboration to address disaster recovery and prevention and learning.

Case 3

Greater Sendai Area, Osaki City (Osaki-Tajiri), Japan

Revitalization of the local economy and socio-ecological system through sustainable use of resources
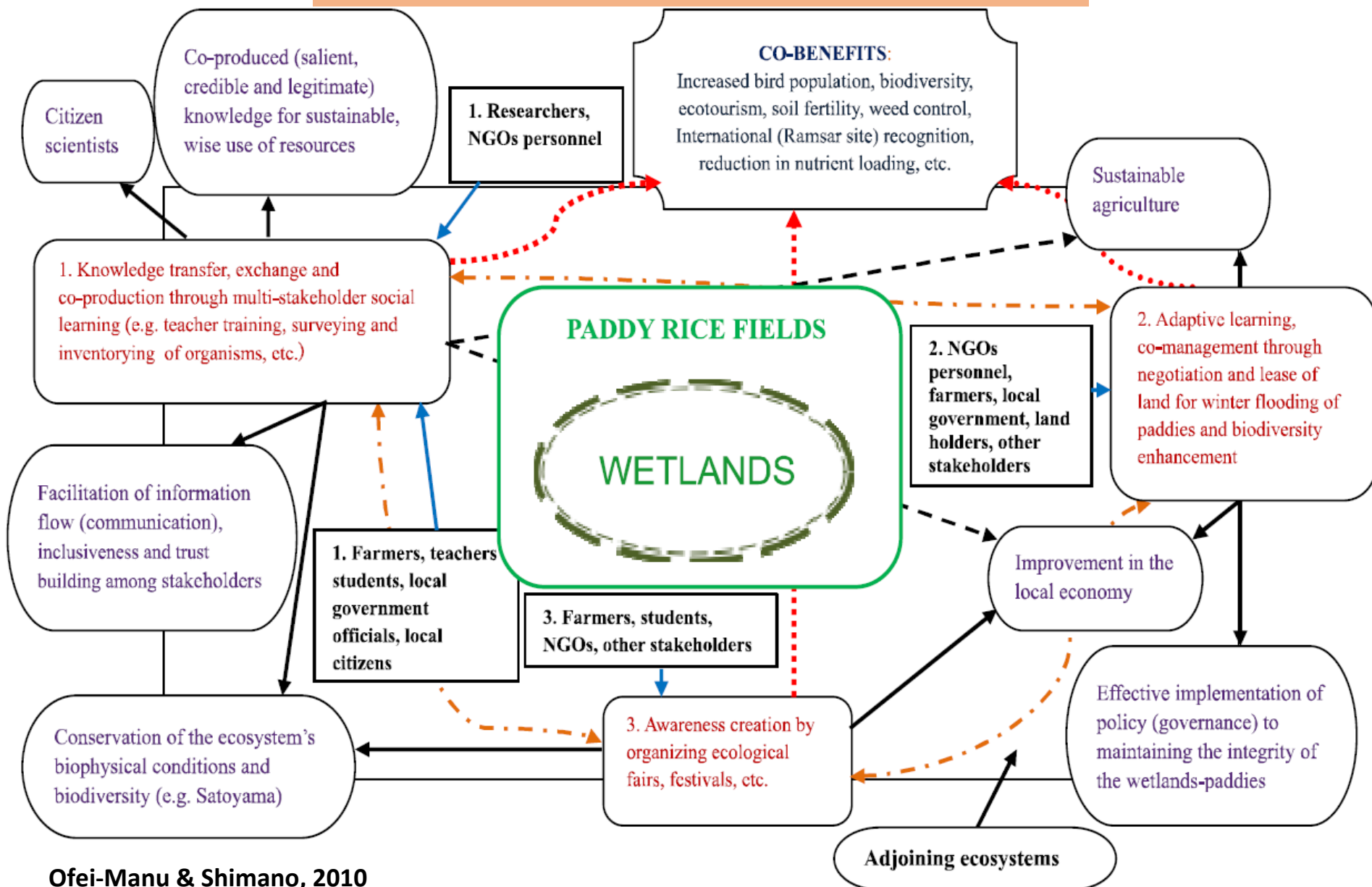
Case 3: Revitalization of the local economy and socio-ecological system through collaborative sustainable resource use

- Osaki-Tajiri wetlands act as a socio-ecological system for a sustainable human-fauna cohabitation.

- Osaki-Tajiri also demonstrates a case of an optimal multi-sectoral use of wetlands and acts as a more stable habitat for tens of thousands of wild geese.

Multi-stakeholder participation and collaboration linked to social learning

Ofei-Manu & Shimano, 2010

Case 3: Revitalization of the local economy and socio-ecological system through collaborative sustainable resource use

- Initiative began when citizen's movement to conserve Kabukuri-numa evolved into a participatory programme for engaging with the community

- This program is a good example of multi-stakeholder collaboration through social learning (including preventive DRR learning) for regional sustainable development.

Case 4

Bristol Learning City Initiative:

Collaborative learning to address the three dimensional challenges facing the city of Bristol

Case 4: Collaborative learning as a basis for implementing initiatives to address socio-economic challenges

- Problem: Although a multi-cultural city, Bristol is also a city of contrasts in terms of inequality on various fronts.

- Bristol Learning City Initiative is governed by a Partnership Board of influential city leaders.

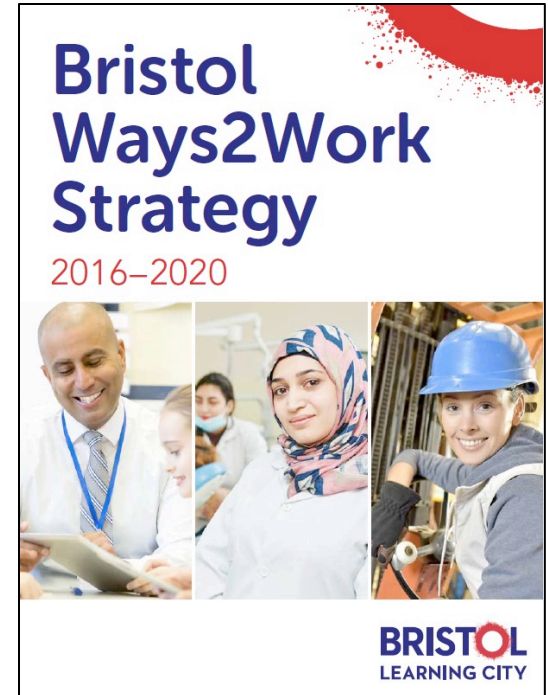**The main aims of the partnership include:**

- Champion learning through collaboration as a way to closing the inequality gap and transform lives, communities, organisations and the city.

- Enabling young people to acquire work experiences, etc.

Stakeholders: All individuals, groups, organisations, etc. in the city are welcome to be part of the initiative.

Case 4: Collaborative learning as a basis for implementing initiatives to address socio-economic challenges

- Also, the participation of citizens in the activities of the city's learning initiatives through collaboration and engagement of other stakeholders, particularly the universities and local businesses have been critical.

- Networking: The city to city partnership/collaboration (network) is also being established between Bristol and Swansea.

Conclusions

- Citizen participation and collaboration in local programs can support cooperative learning and governance processes at the city and community levels on sustainability leading to enhanced adaptive capacity.

- Citizen participation and collaboration can create a collective ownership of solutions to the problems or the outputs/outcomes of the engagements;

- Providing opportunity for all voices to be heard and opinions to be explored through participation and collaboration helps to strengthen the holistic nature of outcomes and decisions taken, and hence the realisation of collective benefits.

Key Messages (1)

- The success of implementing the Sustainable Development Goals in cities will require participation and multi-stakeholder collaboration as well as the optimum, integrated use of relevant capacities to achieve the ultimate goal of productivity, resilience, inclusiveness and sustainability of cities.

- On the theory underlying social collaboration, a structure that can identify a related problem and also enable collaborative processes to help build individual/community resilience using DRR and/or learning/education programs is described.

Key Messages (2)

For each case study, the core issue that prompted the activity and the processes of how the collaboration was achieved are emphasized.

- The IRRM in Yogyakarta used ESD based multi-stakeholder collaboration to restore the health of the river in the city and also to prevent future flooding.

- In addition to strengthening the DRR governance at the municipal level, the university–community collaboration on disaster recovery and resilience building in nearby coastline cities in Sendai, Japan and the affected communities after the GEJE disaster contributed to building resilience among the victims.

Key Messages (3)

- In Osaki City, collaborative learning was used to equip the local community with competencies in a) conservation and wise use of wetlands including economic benefit, and 2) restoring the socio-ecological integrity in the region.

- In Bristol City (UK), collaborative learning is used as a basis for implementing several initiatives to address economic, social and environmental challenges facing the city.

The underlying *theory* and examples of multi-stakeholder collaboration thus provide a window for understanding how citizen resilience/adaptive capacity can be strengthened using community DRR/learning programmes and also show that collaboration can support cooperative relationship processes and contribute to decision-making at the city/community level.

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