



**Outline of
Collaborative R&D Project
on Network of Research Institutes
in Earthquake Prone Areas in Asia**

supported by

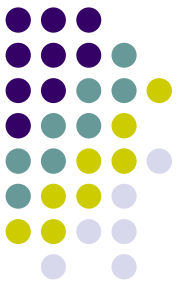
Ministry of Education, Culture, Sports, Science and Technology (MEXT)

**Tokyo International Workshop 2006 on
Earthquake Disaster Mitigation for Safer Housing**
on November 22, 2006

The World Bank Tokyo Development Learning Center (TDLC), Japan

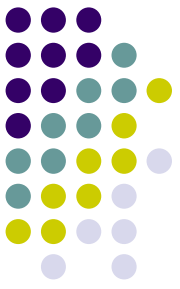
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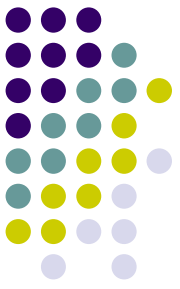
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- Outline of Feasibility Study in 2005
- Outline of Collaborative R&D Project
 - Organization chart
 - Research topics
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- Basic Scheme of Collaborative R&D Project
- Types of R&D Components



Background of New R&D Project

- Wide range of Technical Cooperation for Developing Countries by BRI
 - Training courses on Earthquake Engineering
 - Projects for establishment of R&D centers in DC's
 - R&D and dissemination of technical information
 - Field surveys on earthquake disasters
- Feasibility Study on Safer Conventional Housing in Developing Countries in 2005
- New R&D for three years financed by MEXT Japan launched in 2006

One of the projects on Asia S&T Strategic Cooperation Promotion Program by Special Coordination Funds for Promoting Science and Technology



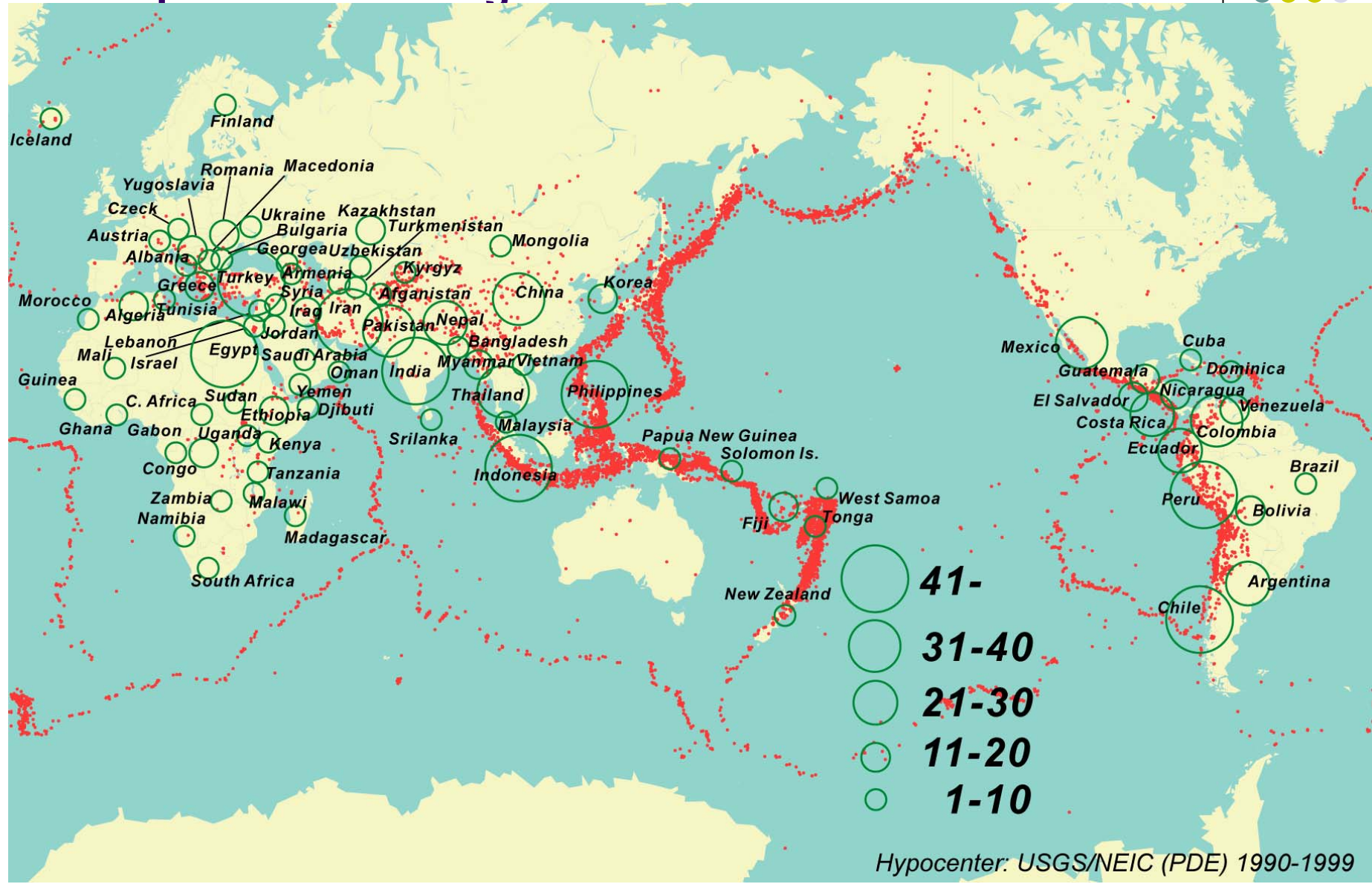
Outline of Technical Cooperation for Developing Countries by BRI

- Training courses on Japanese ODA Programs by IISEE (International Institute of Seismology and Earthquake Engineering)
- BRI/JICA projects for establishment of R&D centers for earthquake disaster mitigation in developing countries
- Activities of R&D and dissemination
- Field surveys on earthquake disasters













Participants of Training courses from all over the world

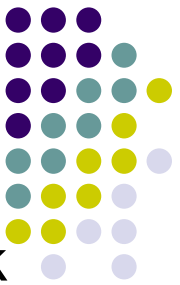


List of BRI/JICA projects for establishment of R&D centers for earthquake disaster mitigation

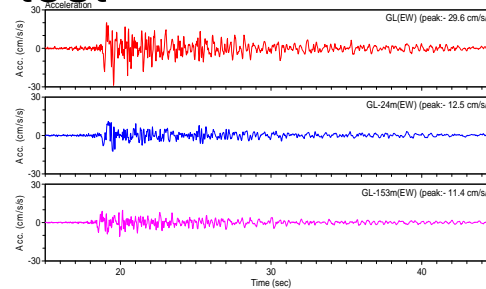


	Country	Project	Period	Counterpart
	Indonesia	The project on the development of appropriate technology for multi-story residential building and its environmental infrastructures for low income people (Structure)	1993-1998	Research Institute for Human Settlements
	Peru	The Japan-Peru Earthquake and Disaster Mitigation Research Center Project	1986-1991	Japan-Peru earthquake and Disaster Mitigation Research Center
	Chile	The joint study project on earthquake disaster mitigation in Chile	1988-1991 1995-1998	University of Catolica
	Mexico	The earthquake disaster prevention project	1990-1996	National Disaster Prevention Center(CENAPRED)
	Turkey	The project for the establishment of Earthquake Disaster Prevention Research Center on the Republic of Turkey	1993-2000	Earthquake Disaster Prevention Research Center
	Egypt	The joint study project on the evaluation of seismic activities in the plate boundaries in Egypt	1993-1996	National Research Institute of Astronomy and Geophysics (NRIAG)
	Kazakhstan	Continuation and improvement of the seismological monitoring system for earthquake preparedness and risk in the region of Almaty city in the Republic of Kazakhstan	2000-2003	Institute of Seismology, Ministry of education and Science, Republic of Kazakhstan
	Romania	The project on the reduction of seismic risk for buildings and structures in Romania	2002-2007	National Center for Seismic Risk Reduction, Ministry of Transport, Construction and Tourism (MTCT)

Outline of Romanian Project



- Project title: JICA Project on the Reduction of Seismic Risk for Buildings and Structures in Romania
- Term of Project: 2002-2007
- Outline of Activities
 - Strong motion observation
 - Outdoor & indoor soil test
 - Structural Test
 - Dissemination





Dissemination of technical information through Internet (IISEE Net)

Information exchange through Internet



Individual characteristics of developing nations
Technological support

Database



Seismic damage
Seismic network
Seismic design code
Microzonation techniques



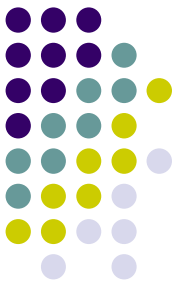
Seismicity and damage
Importance of design code



Seismicity and damage
Importance of design code

● Personal network through IISEE

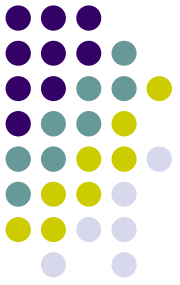
Feasibility Study on a Comprehensive Approach to Safer Conventional Housing in DC's in 2005



● Activities

- Information collection on R&D in the world
- Field studies on construction practices of conventional houses
- Tsukuba International Workshop 2005





Launch of new R&D in 2006

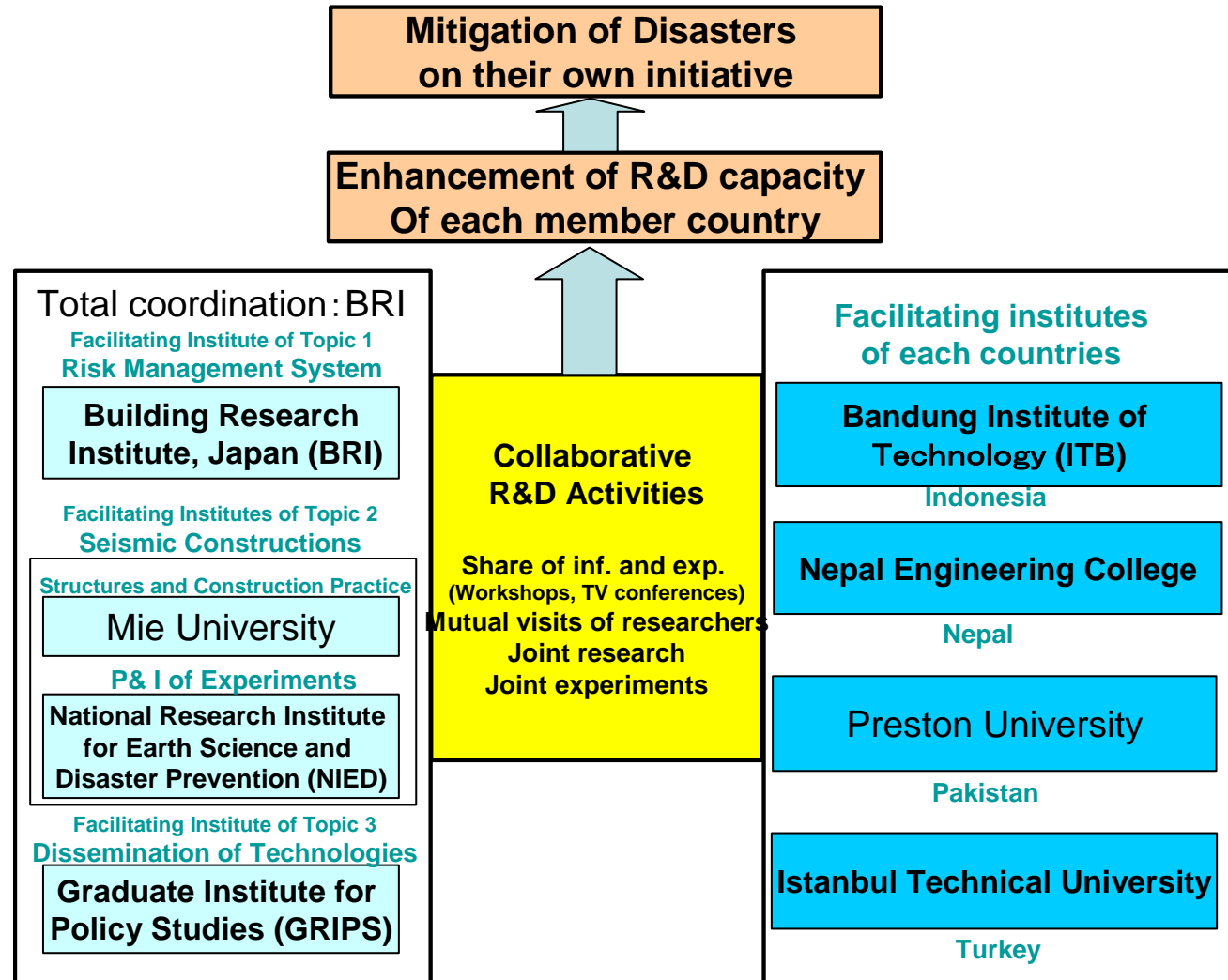
<Collaborative R&D Project for Disaster Mitigation on Network of Research Institutes in Asia>

- **Term of R&D**

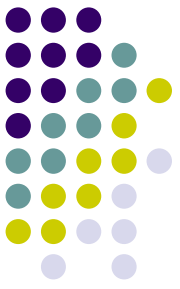
three years
(2006-2008)

- **Funds**

The Asia S&T Strategic Cooperation Promotion Program prepared by Ministry of Education, Culture, Sports, Science and Technology



Research Topics of Collaborative R&D Project for Disaster Mitigation on Network of Research Institutes in Asia



- R&D focuses on realization of mitigation of disasters
- To concentrate conventional houses which is the main cause of human losses
- To prepare complete proposal of strategies without “missing ring”
- Propose three major topics
 - Feasible and Affordable Seismic Constructions
 - Strategies for Dissemination of Technologies to Communities
 - Risk Management System



● **Feasible and Affordable Seismic Constructions**

To develop appropriate seismic structures and construction practices, which will be expected to be accepted by communities, and to verify them by a series of joint experiments

● **Strategies for Dissemination of Technologies to Communities**

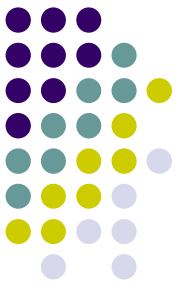
To develop strategies and tools for dissemination of technologies to people and communities such as consecutive workshops in communities, demonstrations, capacity development of housing facilitators

● **Risk Management System**

To develop systems for evaluation of seismic risks with assumed earthquakes, conditions of buildings etc., and to manage them through development of new strategies to mitigate disasters



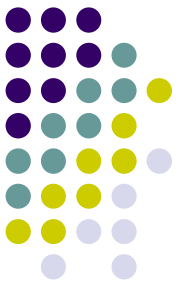
Why mitigation of disasters by earthquakes?



- Earthquakes cause serious damages to human societies



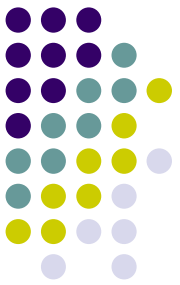
Why conventional houses in developing countries?



- Developing countries are more vulnerable because they can not afford to be prepared
- Conventional housing should be focused because it is the main cause of human losses and needs more to be done to be safer



Why Feasible and affordable technologies?



- Excellent technologies from industrialized countries can not necessarily improve the situation

➔ APPROPRIATE TECHNOLOGIES

APPROPRIATE means

Affordable and Feasible

We have to learn every aspects of each community such as materials, structures, labor skills, industries, economies & households

Why dissemination of technologies to communities?



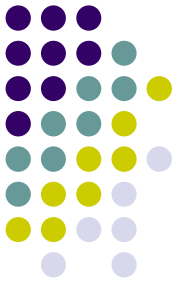
- Technologies can work only when people/communities accept and introduce them

➔ **Dissemination of technologies to people/communities is the key issue**

Developing countries do not have social infrastructures for disseminating technologies such as enforcement of standards

Effective approach should be explored

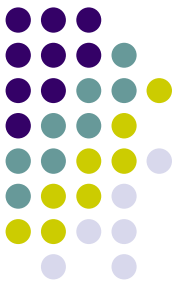
Why risk management system?



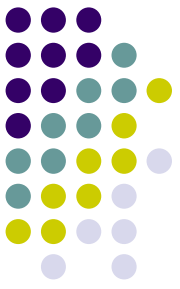
- Evaluation of potential risks by earthquakes is the very first step
- The evaluation allows us to prepare future possible earthquakes effectively
- The evaluation could work to enhance awareness of potential risks for
 - policy makers
 - people in practice
 - people/communities and all relevant people

We should explore full utilization of R&D achievements, available data like satellite images, others from large compilation of former studies and works.

Why wider range of people to be involved?



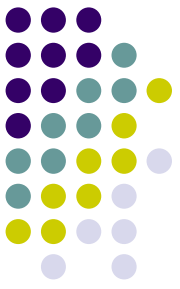
- “Mitigation of disasters by earthquakes requires comprehensive approach including
 - Science
 - Engineering
 - Socio-economic studies
 - Policy studies
 - Development studies
 - other relevant studies
- Comprehensive approach requires participation of **wide range of institutions of various fields** both in industrialized and developing countries



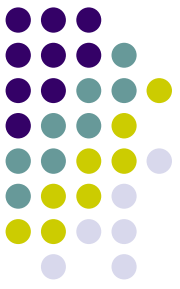
Basic scheme of R&D

- Platform for collaboration among participating institutes
 - mutual visits
 - events for sharing information and discussion
 - communication by IT tools like video conference system, internet
- R&D components for collaborative work
 - proposals by any people/institutes
 - elaboration of work plan
 - implementation with contribution of all the participating countries
 - achievements should be shared through the Platform and other channels

Tokyo International Workshop 2006 and Relevant events (KTT Session 2006)



- Kick off events for launch of the New R&D Project
 - Plenary Meeting on Nov. 22
 - Group Discussion on Nov. 23 on five countries (Indonesia, Nepal, Pakistan, Turkey and Peru)
 - connecting nine sub venues in five countries
 - Japan – Tsukuba
 - Indonesia – Jakarta, Bandung, Yogyakarta, Banda Aceh
 - Nepal – Kathmaudu
 - Pakistan – Islamabad
 - Turkey – Istanbul, Ankara
- Kobe, Tokyo and Tsukuba Session 2006 for Safer Housing (KTT Session 2006)
 - Series of events of workshop, presentation & discussions, technical visits
 - Nine invited participants from abroad and General Coordinator, Coordinator of each research topic, partners from supporting organizations from Japan
 - Duration of fourteen days (Nov. 15 to Nov. 28)



Principles of R&D Components

- Any people/institutes in any country is eligible for proposals and participation
- Collaboration on equal partnership with contributions from all the participating institutes

examples of contributions:

Planning/programming of activities

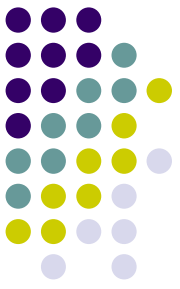
Management of activities

Human resources like surveyors, interviewers, technicians

Inputs like data, experiences, expertise

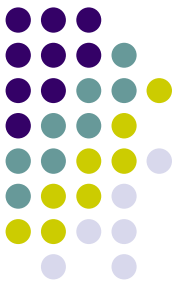
Financial support

- Proposals should be addressed to the most appropriate person among Coordinator of each research topic or General Coordinator before Dec. 31



Types of R&D Components

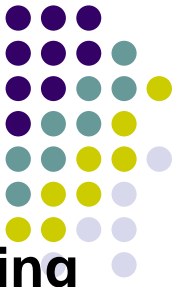
- **Type 1**
 - R&D activities are to be implemented mainly in participating countries
 - **Contribution by participating countries**
 - Planning of R&D activities
 - Management of R&D activities
 - Human resources (survey, analysis, assessment, development of proposals and so on)
 - **Contribution by Japanese side**
 - Inputs like information/expertise/experience of Japan
 - Collaborative work on site
 - Financial contribution to expenses for the R&D
- **Example of expected topics**
 - field survey on the site
 - experimental R&D using the materials of actual practices



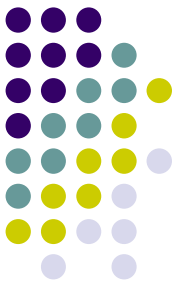
Types of R&D Components

- **Type 2**
 - **R&D activities are to be implemented mainly in Japan**
 - **Contribution by participating countries**
 - Planning of R&D activities
 - Preparation works like collecting existing information, R&D achievements, materials/tools/equipments necessary for the R&D
 - Human resources (analysis, assessment and so on)
 - Collaborative works in Japan
 - **Contribution by Japanese side**
 - Management of R&D activities
 - Inputs like information/expertise/experience of Japan
 - Collaborative works in Japan
 - Financial contribution to expenses for the R&D
- **Example of expected topics**
 - experimental R&D using experiment facilities in Japan like shaking tables

Types of R&D Components

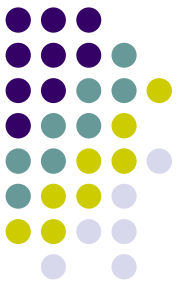


- **Type 3**
 - R&D activities are to be implemented in each of participating countries and followed by collaborative works like tabulation/inventorying, comparison, analysis and assessment
 - **Contribution by participating countries**
 - Planning of R&D activities (organizing country)
 - Implementation of R&D in each country (survey, analysis and so on)
 - Participation in collaborative works
 - **Contribution by Japanese side**
 - Inputs like information/expertise/experience of Japan
 - Implementation of R&D (survey, analysis and so on)
 - Participation in collaborative works
 - Financial contribution to expenses for the R&D
- **Example of expected topics**
 - Comparison/analysis/assessment on issues of common interest of all the participating countries



Types of R&D Components

- **Type 4**
 - R&D activities are to be implemented mainly in participating countries on ownership of participating countries with support of Japan
 - **Contribution by participating countries**
 - Planning of R&D activities
 - Management of R&D activities
 - Implementation of R&D
 - **Contribution by Japanese side**
 - Inputs like information/expertise/experience of Japan
 - Advisory work on site
- **Example of expected topics**
 - introduction of technologies/methodologies/facilities from other countries
 - R&D which needs advices/support from other countries including Japan



Types of R&D Components

- **Type 5**
 - **R&D activities are to be implemented mainly in Japan with support of participating countries**
 - **Contribution by participating countries**
 - Inputs like information/expertise/experience
 - Advisory work in Japan
 - **Contribution by Japanese side**
 - Management of R&D activities
 - Implementation of R&D
- **Example of expected topics**
 - **common issues for all participating countries and suitable for initiative of Japan for the implementation with supports of participating countries**



BRI and the partner institutes of Collaborative R&D Project

expect

active participation and contribution of
researchers, engineers and people in
practice in the world

for safer built environment

Thank you