

JICA's Efforts in 3R & Solid Waste Management; Good Practice and Lessons Learned

The Regional 3R Forum in Asia Nov. 12, 2009



3R Program (Malaysia)

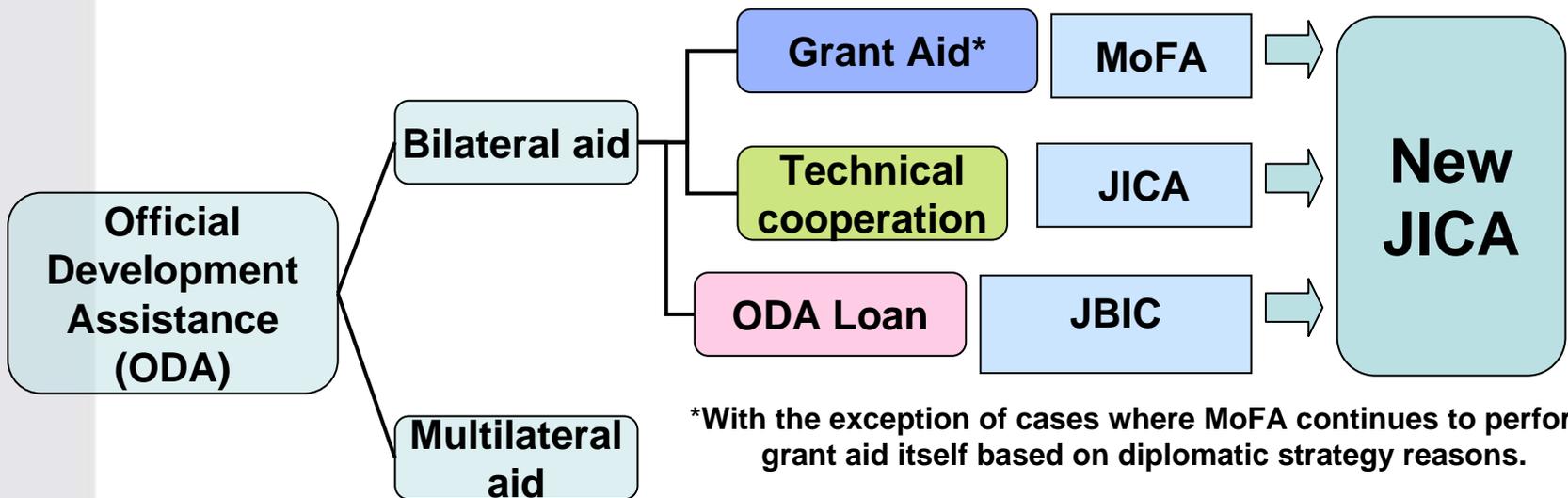
**By Naoki Mori
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JICA**

Today's Topics

- 1. JICA's approach to Solid Waste Management (SWM)**
- 2. 3R projects in Asia supported by JICA**
- 3. Good practices : Hanoi 3R project**
- 4. Lessons learned and future challenges related to 3R in SWM**

About 'New' JICA

- Founded on October 1, 2008
- Integration of All ODA schemes
(Technical Cooperation, Grant Aid and ODA loan)
- Annual Commitment is about US\$ 10 billion



*With the exception of cases where MoFA continues to perform grant aid itself based on diplomatic strategy reasons.

JICA's Approach in SWM

- **3R concept should be taken account of in every SWM project.**
- **Capacity Development for not only administration of municipality but broader stakeholders should be focused on in SWM projects.**
- **Comprehensive approach from planning ,human resource & institutional development to infrastructure development in SWM, utilizing TA , grant aid and ODA loans.**

JICA's Comprehensive Approach to Support SWM



JICA Project MAP(Waste Management) ①

Mongolia

- The pilot project of manure production facility by livestock waste and solid waste in Central Province (Tuv) (GTC) (2001/6—2002/6)
- The Study on Solid Waste Management Plan for Ulaanbaatar Municipality (DS) (2004/12—2007/3)
- The Study on Solid Waste Management Plan for Ulaanbaatar Municipality (GA) (2006/9—2007/5)

Pakistan

- Capacity Building for Solid Waste Management (TC) (2005/4—2006/3)

INDIA

- Solid Waste Management project in Delhi (TC) (2003/7—2003/12)
- Kolkata Solid Waste Management Improvement Project (LA) (2006/2—2010/11)

Sri Lanka

- The Study on Improvement of Solid Waste management in Secondary Cities of Sri Lanka (DS) (2002/3—2003/12)
- Capacity Upgrading Project for the National Solid Waste Management Support Center (TC) (2007/3—2011/3)

China

- The Japan-China Friendship Environmental Protection Center Project (Phase 2) (TC) (1996/2—2001/1)
- The Project for improvement of solid waste management in Xian (GA) (2002/10—2003/2)
- Xinjiang Uygur Autonomous Region Yining City Comprehensive Environmental Renovation Project (LA) (2005/4—2011/9)
- Promotion of Circular Economy (TJ) (2006—2008)
- Promotion of Circular Economy (Expert) (2006/8—2008/8)
- Establishment of Urban Environmental Improvement System and Resources Recycling System in China (GTC) (2007/7—2009/12)
- Model Project; Support Da-tong City Construct the Resource Circulative Society (GTC) (2008/4—2011/3)

Nepal

- CD for solid waste management (TJ) (2002—2006)
- The Study on the Solid Waste management for the Kathmandu Valley (DS) (2004/1—2005/8)

Bangladesh

- Solid Waste Management Study in Dhaka City (DS) (2002/11—2005/3)
- Strengthening of SWM in Dhaka City -Clean Dhaka Project (TC) (2007/2—2011/2)

Indonesia

- Capacity Building for Indonesian Ecolabel Program (TC) (2005/7—2006/3)
- Program development for Indonesian ecolabel program (TC) (2006/3—2007/2)
- Maintenance and operation of solid waste disposal norms (Ex) (2000/8—2000/10)
- Maintenance and operation of solid waste disposal norms (Ex) (2002/2—2002/2)

All Asia

- Environmental Management Policy (TJ) (2006—2008)
- Solid Waste Management Training for realizing the Improvement Measures (TJ) (2007—2009)

DS: Development Study
TC: Technical Cooperation
GTC: Grassroots Technical cooperation
GA: Grant Aid
LA: Loan Aid
TJ: Training course in Japan
GT: Group training in third countries
Ex: Expert
Red is on-going project

Thailand

- The Study on Master Plan on Industrial Waste management in the Bangkok Metropolitan Area and its Vicinity (DS) (2001/2—2002/9)
- A pilot project to Construct a Recycling System in Southern Thailand (TC) (2002/10—2005/10)
- Study for Development of Waste management System in Local Communities (DS) (2003/8—2003/11)
- Capacity development for young officer in SWM (GTC) (2008/4—2010/3)

Vietnam

- Improving Solid waste management (TJ) (1998—2003)
- HaiPhong City Environmental Improvement Project (I) (LA) (2005/4—2011/12)
- Program for the Trainee from Shizuoka City's Friendship City Hue, Vietnam (GTC) (2006/4—2009/3)
- The Project for Implementation Support for 3R Initiative in Hanoi City (TC) (2006/11—2009/11)
- HaiPhong City Environmental Improvement Project (II) (LA) (2007/6—2015/8)

Cambodia

- Study on Solid Waste Management in Phom Penh Municipality (DS) (2003/2—2005/3)

Philippines

- The study on industrial hazardous waste management (phase 1) (DS) (2000/1—2001/3)
- The study on industrial hazardous waste management (phase 2) (DS) (2001/9—2002/9)
- The project for Establishment and Implementation of Environmental Conservation Plans in Local Government Units (GA) (2002/2—2005/2)
- Subic Bay Freeport Environment Management Project (Phase II) (LA) (2003/1—2010/7)
- Support for Initial Stage of NSWMC-DENR(1) (TC) (2003/5—2003/8)
- Support for Initial Stage of NSWMC-DENR (2) (TC) (2003/12—2004/3)
- The Study on Recycling Industry Development in the Republic of the Philippines (DS) ((2006/7—2008/3)
- The master plan on solid waste management for Boracay Island and Municipality of Malay (DS) (2007/3—2010/7)
- Establishment of Ecological Solid Waste Management in three cities (TC) (2007/10—2010/9)

Malaysia

- Landfill Technology for Solid Waste Management (TJ) (1999—2006)
- The Study on the Safety Closures and Rehabilitation of Landfill Sites (DS) (2003/3—2004/11)
- The Study on Housing and Local Government (DS) (2004/7—2006/7)

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3R Project in Hanoi

- Hanoi Nov. 2006 – Nov. 2009 (3 Years)
- People's Committee, Hanoi URENCO(C/P)
- JICA experts have been working with C/P

1. Model Projects

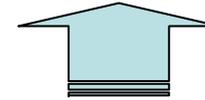
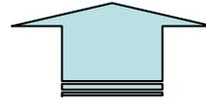
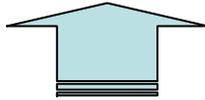
- ✓ Source Separation
- ✓ Compost Improvement
- ✓ Environmental Education & PR

2. Preparation of Strategic Paper/ Action Plan of 3R in Hanoi city

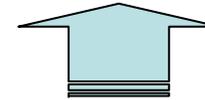
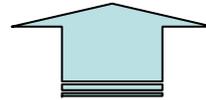
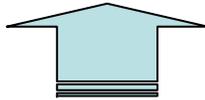
3. Capacity Development through 1-2 activities

Empowerment body "**3R Stars**"

3R Partners
3R Supporters
3R Volunteers



"Participatory Approach"
by stakeholders



"Behavior Change"
in source separation of waste

3 Questions

- What kinds of tools are used for encouraging stakeholders participation in 3R activities?
- How the stakeholders participation is organized and maintained?
- What has achieved by the 3R project?

What kinds of tools are used for encouraging stakeholders participation in 3R activities?

"3R Song"



DVD ca nhạc - Karaoke - Trò chuyện - Phim tài liệu
Music DVD - Karaoke - Interview - Documentary film



Những ngôi sao 3R Hà Nội

Hanoi 3R stars

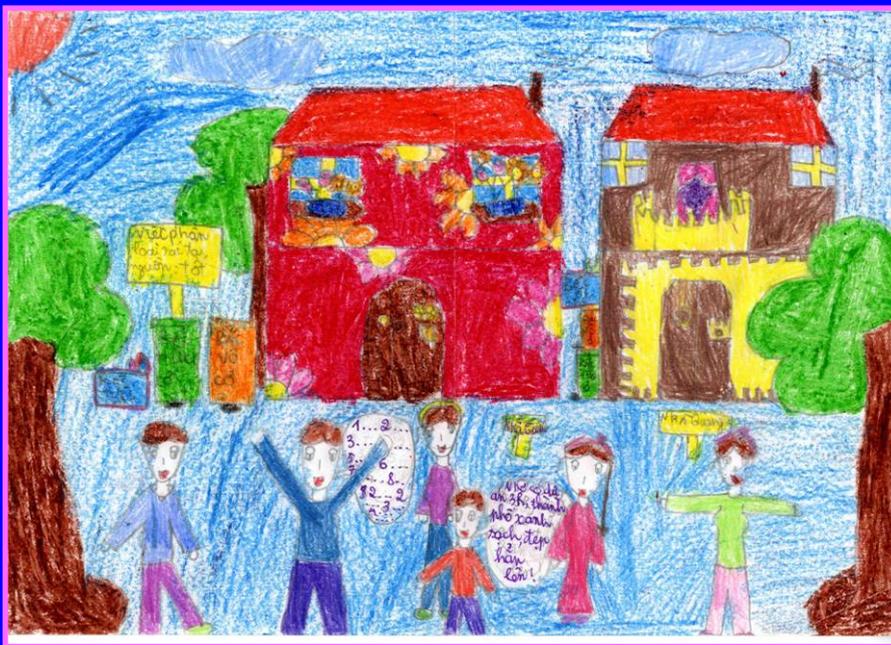
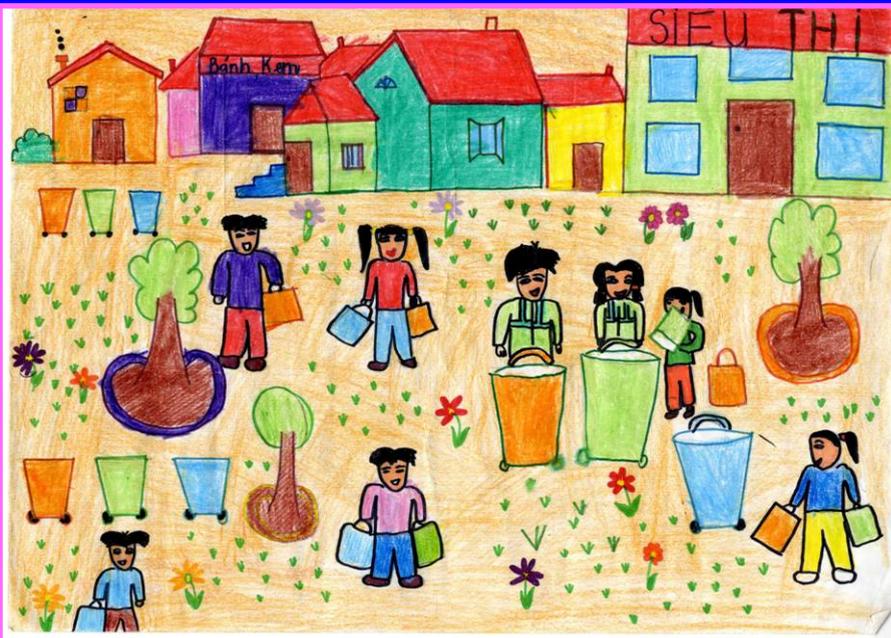
TV-Commercial on Source Separation



www.3r-hn.vn

Environmental Education on "3R"





Eco-Bag Promotion



HỘI THẢO CỘNG ĐỒNG PHƯỜNG
COMMUNITY MEETING IN NGUYỄN
PHƯỜNG ... DU, NGÀY 06 T





PR Goods



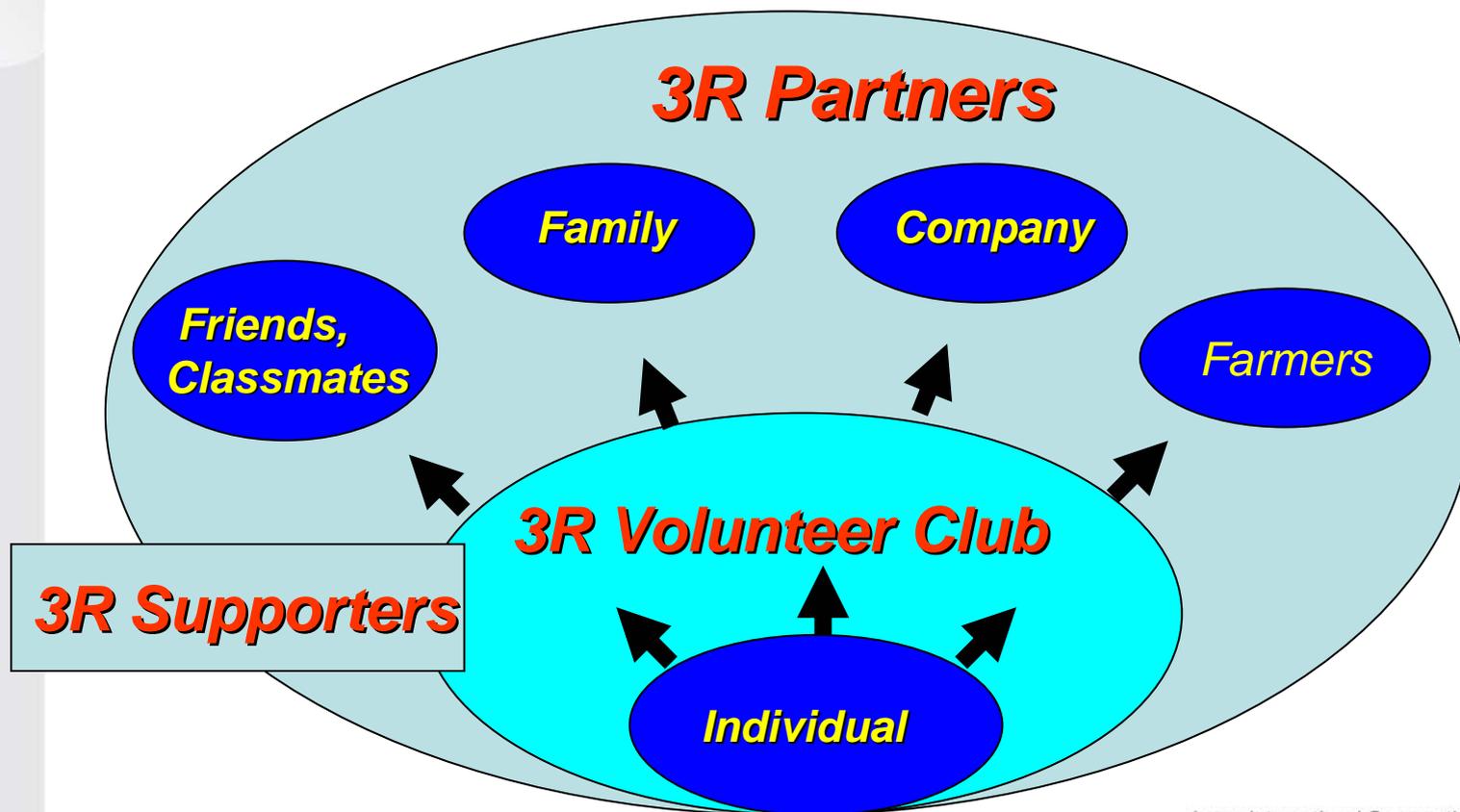


Mottainai Fair

How the stakeholders participation is organized and maintained?

"3R Stars"

Awareness Raising & Partnership Building from 3R Volunteers to 3R Partners



3R Supporters (Youth Union)



3R Supporters

(Women's Union)



Training Workshop among 3R partners



What has achieved by the 3R project?

before



after

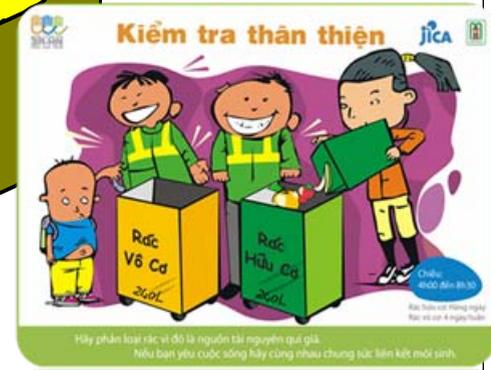
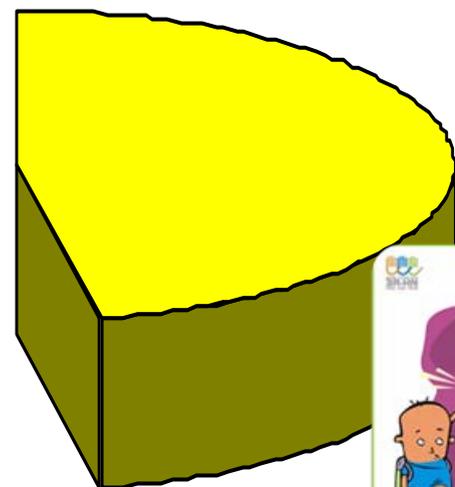
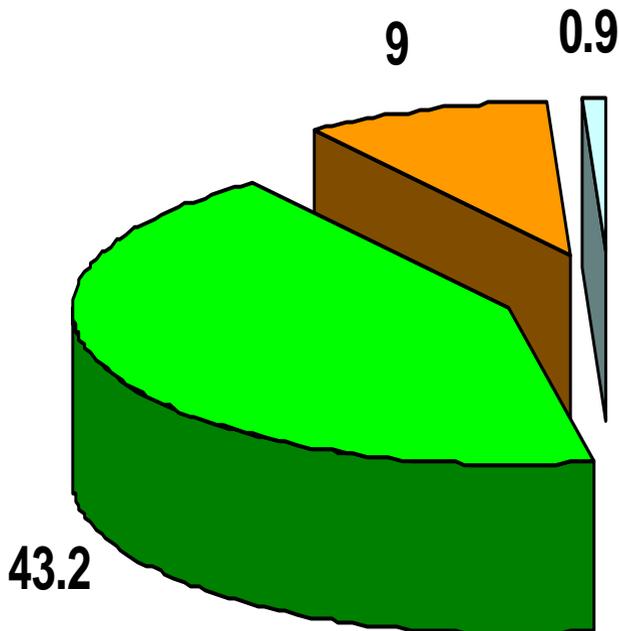


"SS" is accepted by residents in Hanoi

Opinion of residents on sanitation after SS commencement

93%

(Residents in Model Areas)



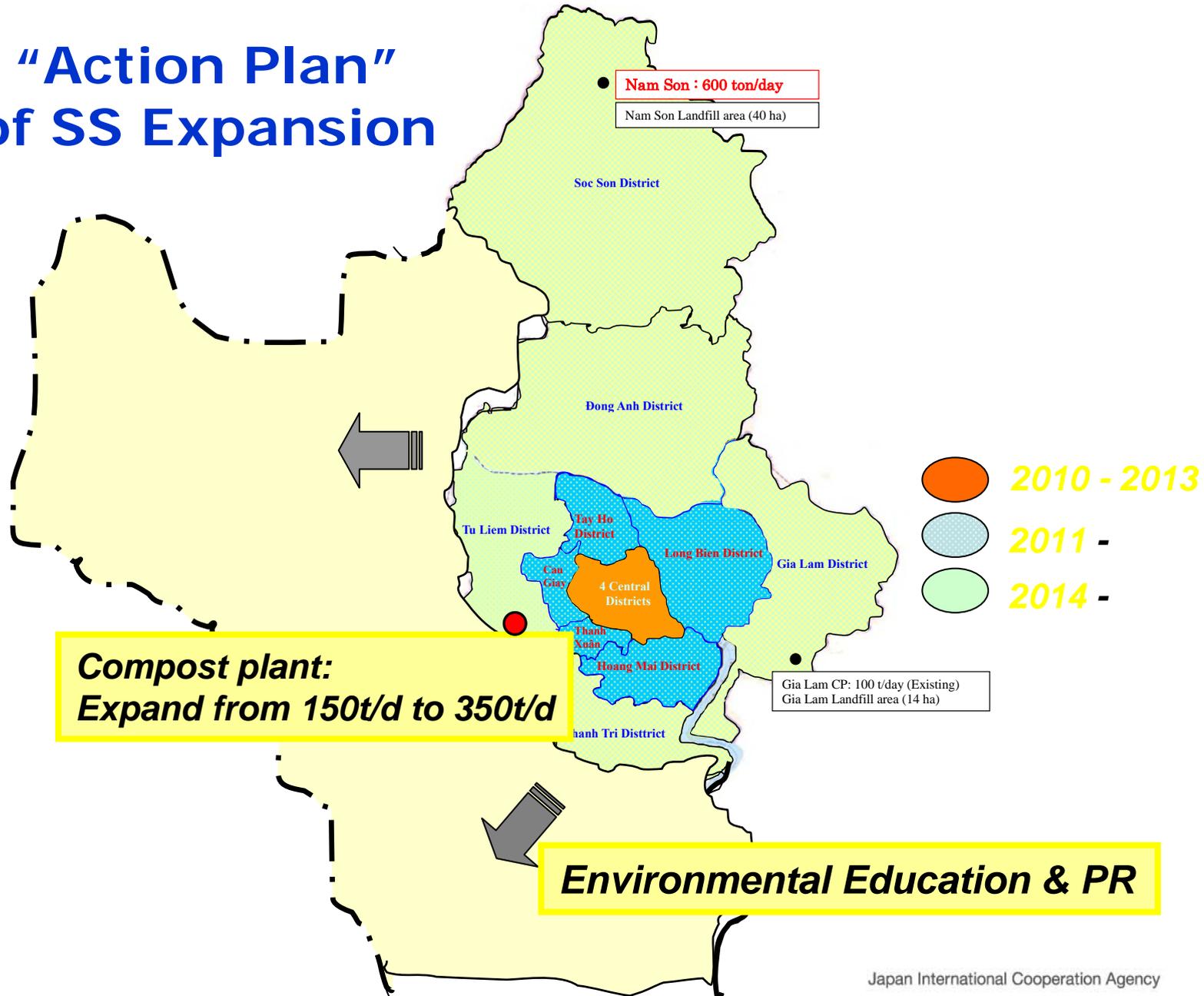
Much cleaner
 Cleaner
 Same
 Dirtier

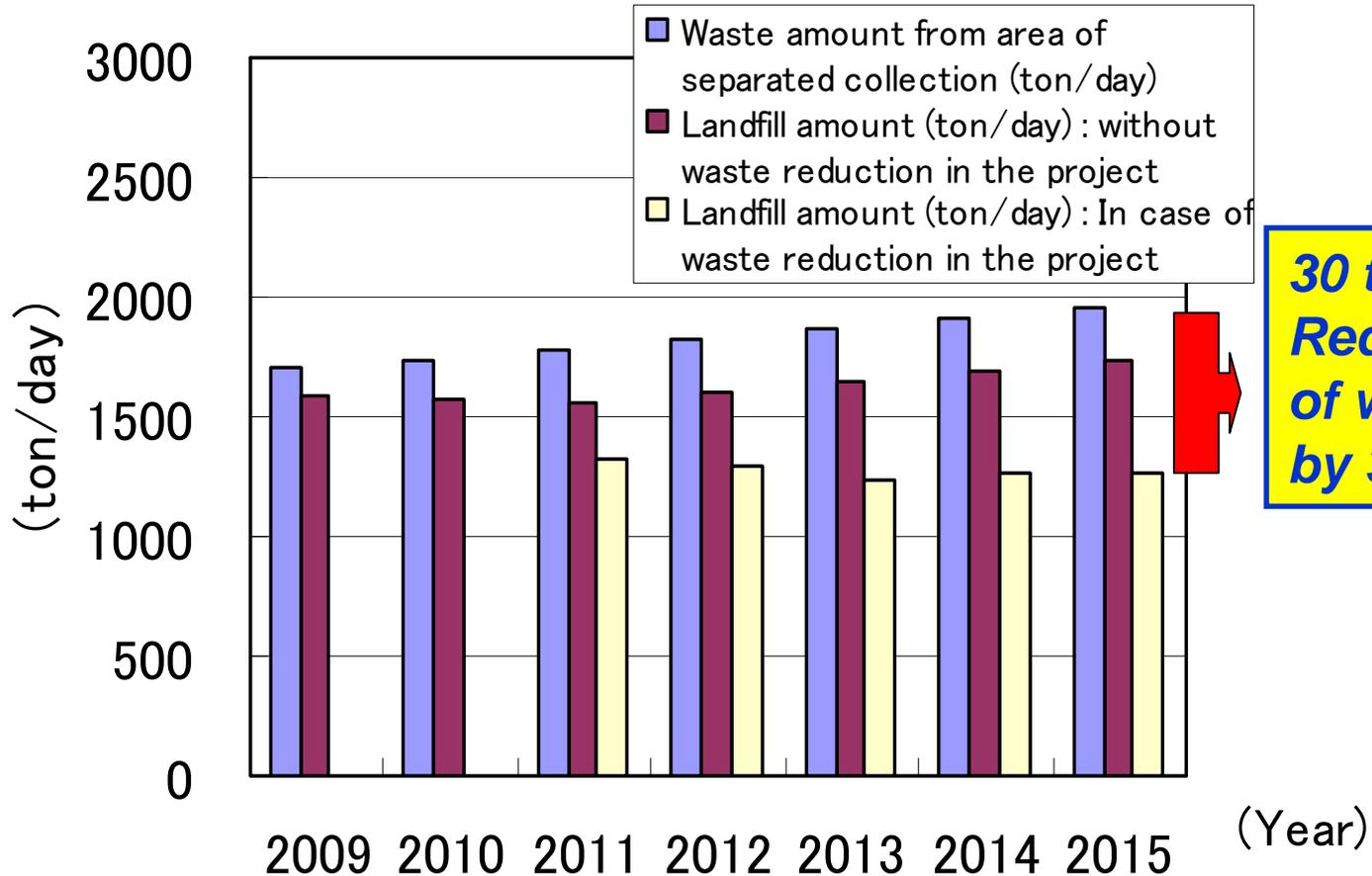
Sample nos: PTC/ 100, ND/100 residents
(Source: 3R-HN PMU, Sept. 2007)

- **Source Separation (SS) has been practiced by 18,000 households in 4 wards in Hanoi city (Model Area), as planned .**
- **Additionally, 15,400 households in other 7 wards in Hanoi (out of the Model Area) has started SS.**
- **Hanoi ordinance on waste management has been revised, where responsibility of each stakeholder is clearly described.**

This is a very important element for promotion of 3R.

“Action Plan” of SS Expansion





Waste amount forecast from area of separated collection and landfill amount forecast in Hanoi city

Lessons Learned and Future Challenges

- 1. Necessity of Cost / Benefit analysis in 3R**
- 2. Mechanism on expansion of pilot project of 3R to other areas**
- 3. Incorporation of GHGs reduction by 3R into project design**

Necessity of Cost / Benefit analysis in 3R

- **3R activities lead to cost increase in waste management in general.
(i.e. collection vehicles, compost facilities)**
- **On the other hand, volume of waste reduction will save costs for OM and investment for new disposal site.**
- **Cost/Benefit analysis including 3R in waste management is very important information for decision makers to support 3R activities.**

Mechanism on expansion of pilot project of 3R to other area

- **Successful result of pilot project is expected to expand into other areas even after TA is over.**
- **Critical issues are;**
 - mobilization of additional financial and technical resources for 3R expansion**
 - expansion of momentum of 3R activities involving community and private sector participation, etc.**
 - collaboration between the government and other stakeholders**

Incorporation of GHGs reduction by 3R into project planning

- **Utilization of gas generated from organic waste or reduction of organic waste itself through 3R contributes to reduction of GHGs.**
- **Co-benefit element including reduction of GHGs in 3R should be clearly taken into consideration at the stage of planning of waste management project.**

Thanks for listening!



For a better tomorrow for all.
Japan International Cooperation Agency

