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MODEL HANDBOOK

Plastic-Reduction Model for Traditional Markets

Cam Le District, Da Nang City

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OVERVIEW

The plastic-waste-reduction traditional market model is implemented in Da Nang City, piloted at 6 markets in Cam Le district (Cam Le, Hoa Cam, Hoa Thuan Dong, Hoa An, Hoa Phat and Hoa Xuan markets). The model aims to change the awareness and behaviour of vendors and consumers to reduce the use of plastic bags and single-use plastic products at the market.

The process for building and implementing the plastic-waste-reduction traditional market model (Da Nang City) comprises 5 steps: (B1) Assess and analyse the context; (B2) Build a plan and reach consensus; (B3) Organise implementation; (B4) Evaluate and adjust; (B5) Document and share.

Step 1. Assess, analyse and identify intervention points

a. Assessing model-building inputs

(i) Secondary-data research method. Secondary data plays an important role in analysing project-related issues. The consultancy team collected, systematised and analysed the following relevant materials:

- Collecting theoretical-framework materials through scientific papers and studies published on reliable sources such as Google Scholar, PubMed...;
- Collecting information on plastic waste (PW) through documents, articles and all project materials such as information, reports, previously implemented projects and other documents;
- Collecting policy groups from central and city levels, gathered directly by the research team through searching keywords: plastic waste (PW), waste segregation at source (WSS), single-use plastic products (SUP);

(ii) Sociological survey. Assessing the awareness and behaviour of vendors and consumers at the market regarding plastic-waste-reduction practices was carried out to provide a base-line database supporting the Management Board to review, amend, supplement and develop policies on “Plastic-waste reduction” and plastic-waste management. Specifically:

- Assessing the behaviour and level of acceptance of behaviour change in using plastic products among residents;
- Proposing solutions to help residents change their habits of using plastic products.

The survey questionnaire was built based on the MOA theoretical framework to assess the behaviour of 2 target groups in plastic-waste-reduction activities, namely (i) vendors and (ii) consumers. The questionnaire has 4 main components:

- General information;
- Motivation of the target group in performing plastic-waste-reduction behaviour at the market;
- Opportunity of the target group in performing plastic-waste-reduction behaviour at the market;
- Ability of the target group in performing plastic-waste-reduction behaviour at the market.

The research scope in terms of space: implemented at 6 markets: Cam Le, Hoa Cam, Hoa Thuan Dong, Hoa An, Hoa Phat and Hoa Xuan markets. The research content covers the awareness and behaviour of vendors and consumers regarding plastic-waste-reduction behaviour. The research subjects are vendors of the meat and fish sector, the vegetable-fruit sector, the dry-goods sector (spices, rice paper, dried noodles) and other sectors (footwear, clothing, food and drink...) as well as consumers.



b. Overall assessment of vendor activities at the market

The overall assessment results reveal the characteristics of each sector and provide suitable proposals for the model. Through the preliminary survey, the sectors have different characteristics, so the composition and volume of waste in general and plastic waste in particular also differ. Case of analysing sectors and plastic-waste generation at Cam Le market:

1. Wet-goods group

- **Meat sector (all kinds):** White, coloured and black plastic bags holding meat, bones... imported from slaughterhouses or wholesalers (thick, large plastic bags, discarded because they are very dirty, generating at least 3kg of plastic bags per day). Each item a customer buys requires at least 1 plastic bag; if a customer buys many items there will be 1 large plastic bag for all. Depending on the business scale, on average each meat vendor consumes 2 – 4 kg of plastic bags. Plastic used for selling meat is mainly white.
- **Fish, shrimp and seafood sector:** Fish and seafood are transported to the market in plastic basins or large stacked trays. Some cooked items are lined with clear thick plastic (generating at least 1kg/day). Customers usually request at least 2 plastic bags for each product type, on average each household consumes 3 – 4.5kg/day.

2. Vegetable and fruit group

- **Fruit sector:** Plastic wrapping of plastic and foam boxes when importing goods (though the amount is negligible), mainly foam boxes. Customers only take 1 plastic bag (on average consuming only about 1 – 1.5kg/day except on full-moon and first-of-month days).
- **Vegetable sector:** Importing goods similar to the fruit sector but with large plastic bags holding produce. Mushroom and vegetable products from companies are pre-packaged (food film and foam boxes), however this amount is very small, about 1/6 of goods sold. Vegetables are often requested to be given separate packaging (estimated on average 3 – 5 kg/day).

3. Dry-goods group

- **Fabric sector:** Fabric imported by box (large plastic bags are generated but the amount is negligible). Plastic bags are still given to customers (for the gift-buying group, thick and nice plastic bags are requested, with import cost of each bag from 600 to 1000 VND).
- **Clothing and footwear sector:** Goods imported by box but each product has plastic-bag packaging, on average generating about 1 – 3 kg of plastic and single-use plastic per day (product packaging). Customers all request plastic bags when buying products.
- **Household-goods sector (plastic items):** Plastic bags of many types and sizes to package products. Customers request plastic bags when shopping (bag sizes are very diverse depending on the product).

For the plastic-waste-reduction traditional market model, the main objectives set out include:

- Raising the community's awareness and responsibility, helping residents change their habits of using plastic bags and single-use plastic products, while strongly promoting the collection and recycling of plastic products and reducing environmental impact.
- Attracting participation and raising community awareness of waste segregation and plastic-waste reduction.
- The proportion of vendors at the 6 main markets in the district reached with information on the harm and reduction of plastic waste.
- The proportion of vendors at the market communicated to about the harm of plastic waste through visual communication and performing waste segregation at source.

c. Working with stakeholders to identify priorities and select intervention points, objectives and implementers

From the results of the sociological assessment and secondary-information analysis, the project team works with key stakeholders to discuss and confirm the issues to be addressed, while clarifying the needs and roles of stakeholders. Through meetings and exchanges, the model's objectives are identified and agreed among the parties. In the meetings, tools such as SWOT and stakeholder analysis are used.

Step 2. Build the joint action plan, establish the mechanism and roles of the parties

a. Defining the role of each party

Stakeholders are mobilised to participate in discussion meetings to build the joint action plan of the model. Through discussions, the roles of the parties are defined.

b. Implementation plan

The model's implementation plan is built based on the agreement of stakeholders. The model's objectives may depend on the characteristics of each market. The model's initial objectives will contribute to the general objectives of the joint action plan (JAP) such as:

- **Activity 1:** Sociological assessment of the awareness and behaviour of vendors and market-goers, to identify sectors, vendors and market-goers committed to reducing plastic waste. Advisory/implementing agency: Department of Natural Resources & Environment (DoNRE); coordinating: Department of Economy, Markets Management Board; duration: 1 month.
- **Activity 2:** Organising communication programmes, encouraging practices to limit plastic-waste use, through signing plastic-waste-reduction commitments between vendors and related units. Advisory/implementing agency: DoNRE; coordinating:

Department of Economy, Culture-Information & Sports Centre, ward People's Committees, Markets Management Board; duration: 6 months.

- **Activity 3:** Building and piloting the practice “Green shopping – Shopping without plastic bags” and 01 practice “Green stall without plastic bags”. Advisory/implementing agency: DoNRE; coordinating: Department of Economy, District Women's Union, Markets Management Board; duration: 6 months.
- **Activity 4:** Documentation, organising a preliminary-review workshop, model field visits and building a plan to maintain and scale up the model. Advisory/implementing agency: DoNRE; coordinating: Department of Economy, Markets Management Board; duration: 2 months.

The model's framework plan includes the capacities to be strengthened for the market Management Board (MB):

- Capacity in solid-waste management;
- Capacity to organise communication programmes, encourage practices to limit plastic-waste use, through signing plastic-waste-reduction commitments between vendors and related units;
- Capacity to build and pilot the practice “Green shopping - Shopping without plastic bags” and the practice “Green stall without plastic bags”;
- Organising communication events on plastic-waste reduction at the market, e.g. a Green Sunday to launch and maintain the campaign “No plastic bags” on Sundays at the market;
- Communicating to business households, consumers and tourists about the plastic-waste-reduction market model;
- Building communication materials suitable to the audience at the traditional market.

The MB's capacity relates not only to knowledge of solid-waste management but also includes activity-organisation management capacity, including financial and planning management and strengthening coordination ability. Enhanced organisational capacity will help the MB maintain activities after the project ends.

Step 3. Support implementation organisation

a. Strengthening capacity for the market Management Board (MB) and awareness for vendor households

Capacity-building training for MB staff and vendors is carried out at the markets.

Promoting the participation of vendors and businesses. Vendors are mobilised to participate in the activities of the plastic-waste-reduction traditional market practice. Households

are informed about the model activities, and the MB needs to mobilise businesses related to alternative products to participate.

Communication. Communication activities need to be carried out regularly and throughout the model's operation. This must also be clearly shown in the model action plan built and agreed by stakeholders in step 2 of this process.

(i) Building the practice “Green stall without plastic bags”

The approach of this model is to identify MB staff and vendors as the group that needs to change first and foremost. Turning a market into a green market takes time and step-by-step change, from changing awareness through communication activities and intervening with initiatives to reduce plastic consumption, especially plastic bags, to reinforce the attitude of vendors and customers and gradually form habits and rules of environmental behaviour (through reducing single-use plastic consumption at the market).

The pilot practice “Green stall without plastic bags” is carried out with the main activities:

- Dry-goods vendors use paper instead of plastic bags: in the initial phase, alongside using paper bags, dry-goods vendors are encouraged to make their own paper bags from old paper (calendars, books, newspapers) in their free time to reduce plastic-bag emissions into the environment;
- Fruit and vegetable vendors use paper bags, banana leaves and biodegradable bags to replace plastic bags: vendors share with customers to persuade them to reduce the number of paper and biodegradable bags per purchase;
- Wet-goods vendors use biodegradable bags and hand out the minimum number of plastic bags per sale;
- Encouraging plastic-sector vendors to provide plastic boxes for shopping to hold wet food (meat, fish, seafood) instead of using plastic bags;
- Supporting vendors to buy and use shopping plastic bags to reduce plastic bags;
- Opening a stall renting shopping baskets for two months, after which consumers will gradually become interested and shift from the habit of using plastic bags to alternative products, especially bringing a shopping basket to reduce plastic-waste emissions when shopping.

For example, at Cam Le market, currently 10 vendors commit to participating in the green-stall-without-plastic-bags practice. Survey results show 8kg of biodegradable plastic bags are distributed daily to participating vendors in the dry, wet and vegetable sectors. Among these, the vegetable-fruit sector has the highest distribution rate, with 1.5kg of biodegradable plastic bags per day. Next is the wet sector, with an average consumption rate of 0.6 kg of biological bags per day. To facilitate vendors and consumers, the MB arranged a separate green-stall area right at the market gate both to supply alternative products to vendors and to allow interested customers to access them.

(ii) Building the practice “Green shopping – Shopping without plastic bags”

Based on the survey of consumers' plastic-emission needs, the activity encouraging bringing a shopping basket faced difficulties because customers travel directly from their workplace to the market to shop. Therefore, the project proposed the practice “Green shopping - Shopping without plastic bags” for consumers.

To implement the model's activities, the pilot teams are the core of the model. The pilot group comprises vendor households with a spirit of participating in plastic-waste reduction, who registered with the MB. For the pilot practice “Green shopping – Shopping without plastic bags” at Cam Le, 60 households in the residential area near the market signed a commitment with the MB. For the practice “Green stall without plastic bags”, 10 vendor households at Cam Le market registered a commitment.

Pilot households are supported with training and capacity building on solid-waste management at the market and waste-reduction practices. They are also prioritised for support with alternative products in the initial phase to promote companionship and communication to surrounding business households.

The market Management Board plays the role of coordinating and organising activities. To ensure effectiveness in organising implementation and clearly assigning roles, the MB issues an implementation plan. During implementation, meetings may be held to update implementation information and adjust activities appropriately. The Markets Management Board closely coordinates with the DoNRE, ward People's Committees and stakeholders in the model to effectively implement the activities per plan. The model activities need to be continuously maintained and become regular activities at the market. This contributes to strengthening the model's sustainability.

Step 4. Evaluate and learn

a. Assessing the change in vendors' awareness and behaviour after implementing the model

(i) Assessing the change in awareness of vendors across sectors. A survey was carried out with the participation of vendors doing business at the market to assess the change in the awareness of vendors and the management board about plastic pollution at the market. The assessment of awareness change can be conducted after training courses. For example, at Cam Le market, the training “Advocacy, enhancing implementation of the WSS model and reducing plastic use” was carried out with the participation of 120 vendor households and 20 staff of the market management board and local authorities. The assessment of participants' awareness change after training recorded: (i) 26% of vendors changed their daily habit of using plastic bags and SUP plastic products; (ii) 14% of vendors used biodegradable plastic

bags in business; and (iii) 69% of vendors signed and implemented commitments to reduce plastic waste in their business at the market.

The recorded change contents include: commitment to reducing waste; change in plastic-bag-use behaviour; change in behaviour of advocating to buyers; self-implementation of plastic-reduction behaviour.

For example, at the Cam Le market model, a survey was carried out and recorded outstanding results: (i) 80% of vendors fully agreed that implementing the commitment would sustainably reduce plastic-waste volume, specifically using biodegradable plastic bags in business with minimum emissions or using paper bags for the dry sector to replace plastic bags; (ii) 75% of vendors agreed to advocate the green plastic-waste-free shopping form; and (iii) more than 50% of vendors committed to changing their daily habits, specifically equipping themselves with a bag when going to the supermarket and a food container when buying food.

(ii) Assessing the change in plastic-reduction behaviour of vendors across sectors. Based on the awareness-change assessment results, a behaviour-change survey was carried out. The assessment method is similar to the awareness-change assessment. The questionnaire is designed to suit the interventions described in the model implementation plan.

Assessing the suitability and feasibility of alternative products. To assess the practical feasibility of the 02 pilot practices, a survey was carried out with the aim of assessing the suitability and feasibility of alternative products (such as paper bags, reusable plastic boxes, glass bottles...). In addition, assessing the suitability of the approach also needs to be done to understand how the model operates and the participation of vendors and residents. The assessment results will contribute to adjusting the approach in the model and selecting suitable alternative products. At Cam Le, the assessment results recorded:

- For the pilot practice “Green stall without plastic bags”, 100% of participating vendors agreed the model can be implemented successfully in practice. 77% of vendors considered that using biodegradable plastic bags suits consumers' trend of clean, safe and convenient consumption compared with other alternatives. Notably, for the dry sector specifically, 70% of vendors agreed that using paper bags and plastic boxes, glass bottles is suitable when applied in practice.
- For the pilot practice “Green shopping – Shopping without plastic bags”, specifically renting mesh shopping bags, 77% of vendors considered this model very suitable to customers' current shopping practice. The reason for this agreement is that most consumers travel from their workplace to the market to shop, so they do not bring a shopping basket. This deposit-refund form gives consumers the habit of using shopping bags/baskets when shopping, strengthening the spread of communication activities on plastic-waste reduction at the market.

Analysing difficulties and advantages in implementing the model. A group interview was carried out to identify the difficulties and advantages of vendors in implementing the pilot

plastic-reduction model at the market. Survey results show that the applicability of biodegradable plastic bags is one of the obstacles of plastic-reduction practice, specifically: (i) product price; (ii) product design; and (iii) product material, which do not meet product-consumption needs. In addition, negative reactions from customers create hesitation among vendors when converting to alternative products and reducing plastic. For example, at Cam Le market:

Advantages:

- Receiving the attention of authorities in supporting communication to raise awareness for vendors and consumers about plastic-waste reduction;
- Receiving price support when buying and using biodegradable plastic bags in business;
- Support to pilot the mesh-shopping-bag rental activity, creating comfort for customers when shopping.

Difficulties:

- Consumers do not yet have the habit of using alternative products;
- Negative attitude of customers towards reducing plastic bags;
- High price of alternative products, hard to continue without price subsidy;
- Current biodegradable bags are not aesthetic or attractive to look at;
- Biodegradable bags come in few sizes, shared for all stalls; this causes very large waste.

Step 5. Document and share for scaling up

a. Documentation and sharing

The model results need to be compiled in a report to inform local management agencies as required by the joint action plan (JAP). Besides reporting to management agencies, the report will help share information with parties interested in the model. As an example, for Cam Le market, after reporting at the project's second-year workshop in Hoi An, the representative of Hoi An market expressed interest and a desire to exchange and learn the approach. In addition, documenting the project implementation process is an important product, contributing to promoting the model's scale-up in the future.

b. The model's scale-up potential

The model's scale-up potential needs to be assessed objectively with the model's subjects to understand its sustainability and from there propose scale-up activities. At Cam Le market, based on the survey results, the alternative products proposed in the green-stall-without-plastic-bags practice were assessed as having scale-up potential, specifically: (i) 66% for paper bags replacing at the dry sector; 82% for plastic boxes and glass bottles at the food and

wet sectors; and 52% for biodegradable plastic bags at all sectors. However, the survey data also recorded that the scale-up scope of this product is limited, specifically only 33% of vendors considered this model can continue to be piloted at the sector or at other markets. For the pilot mesh-shopping-bag rental practice, more than 50% of vendors considered this model can be scaled up and at a large scale. The reason considered is that the model ensures a balance of economic and environmental benefits for vendors and consumers when operating at the market. Specifically, vendors reduce the cost of buying and stocking plastic bags, and consumers are given a comfortable feeling, not being pressured when shopping.