Product Category Rules (PCR)

(Approved PCR ID: PA-BJ-03)

Raw Bananas

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The Carbon Footprint of Products Calculation and Labeling Pilot Program

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http://www.cfp-japan.jp/english/pcr/pcrs.html

* Approved PCRs are valid for the duration of CFP Pilot Project (scheduled until March 31, 2012). If approved PCR is revised before the expiration date, the revised-edition PCR become effective.

(Provisional Translation)

Product Category Rules (PCR) of
“Raw Bananas”
(Approved PCR ID: PA-BJ-03)

Foreword
-The contents provided in this PCR may be changed and revised as needed for further refinement, through PCR revision procedures, as a result of continued discussions with relevant stakeholders during the period of the Japanese CFP Pilot Project. This PCR will expire at the end of the Project (scheduled until March 31, 2012).
-This English translation of the original Japanese PCR is provided for information purpose.

No.	Items	Contents
1	Scope	This PCR prescribes rules, requirements, and instructions applicable to “raw bananas” under the CFP Pilot Project.
2	Definitions of products	
2-1	Descriptions of product category	- The product covered by this PCR is raw bananas (for eating). - Raw bananas (for eating) refer to bananas available to be eaten raw, by ripening naturally or with ethylene gas, etc. after harvested. - Bananas for cooking, before/after ripened, are excluded from the assessment.
2-2	Components of products	Components are, - product itself, - packaging, - enclosed accessories, and - intermediate packaging materials during distribution
3	Referenced Standards and PCRs	Referenced PCRs are, - PA-BB, Paper containers, packaging and wrapping (intermediate goods) - PA-BC, Plastic container and packaging
4	Terms and Definitions	(1) Standard weight The weight of bananas is generally different and varies in some degree in their sales, even if they are the same brand. In this PCR, standard weight is defined as “average shipping weight of banana product (not including packaging materials) in sales unit”. - If weight specifications are defined with certain ranges, adopt the median value. - If weight specifications are defined with certain value (lower limit, etc.), adopt the value. - If weight specifications are not defined, standard weight is the average weight per sales unit (e.g., product sold by piece, by portion, or by unit weight) calculated from total sales weight in the CFP assessment duration. The CFP assessment operator shall prepare evidence ensuring the validity of the value, and verifies its validity during CFP verification. (2) Ripening Bananas are harvested at mature-green stage which is unsuitable for eating. “Ripening” refers to the process to make them suitable for eating by using certain ripening promoter (e.g., ethylene gas, etc.) and controlling temperature. (3) Fertilizer Fertilizer is “elemental fertilizer,” “combined fertilizer,” “organic fertilizer,” and “soil amendment material”. (a) Elemental fertilizer

		A fertilizer containing only one component of nitrogen, phosphoric acid, or potassium. In this PCR, silica (waste-soluble silica gel) is added to these components. (b) Combined fertilizer A fertilizer containing two or more components among nitrogen, phosphoric acid, or potassium. (c) Organic fertilizer A biomass-origin fertilizer containing compost and manure. (d) Soil amendment material A material such as lime used to change the type of soil (physical, chemical, biological properties) for plant cultivation.
5	Range of assessment	
5-1	Calculation unit	- Per unit weight (per 100g). - CFP value per unit weight shall be converted by using standard weight. - Assessment shall be limited to the product whose sales unit is specified at shipping phase.
5-2	Life cycle stages	The following life cycle stages shall be covered: - raw material acquisition stage - production stage - distribution stage - use and maintenance stage - disposal and recycling stage
6	General requirements applied to all stages	
6-1	Life cycle flow chart	See Annex A (normative).
6-2	Range of data collection	- Capital goods, such as facilities for product production and transport, and transport vehicles, shall be excluded.
6-3	Data collection period	- Primary data collection period shall be the most recent one year. - Primary data collection of cultivation related processes may be based on the average of several preceding years' data, if the harvest was extremely low. - When the data of the most recent one year is not used, its validity shall be verified.
6-4	Allocation	- Weight ratio shall be used. - When any other parameter (any physical quantity other than weight such as farm land area, working time, and economic value, etc.) is used, the validity shall be verified.
6-5	Cut-off criteria	When conducting cut-off, the range of cut-off shall be within 5% of the total life cycle GHG emissions, and the range shall be clearly reported. Cut-off shall, however, be conducted, provided that it is difficult to use any scenarios, similar data, and estimated data.
6-6	Others	[Rules related to on-site electricity generation] For on-site electricity generation, the amount of fuels used for the production of the product shall be collected as primary data, and GHG emissions related to the manufacture and combustion of the fuel shall be calculated. [Rules related to on-site production of inputs] - For on-site production of inputs, the amount of fuel and electricity used is apparent. Therefore, individual data for each inputs need not to be collected. (aggregated data can be used) - If biomass energy sources, such as firewood, wooden chips, and charcoal are

		produced on-site, the energy consumption necessary for the production shall be collected. If the energy consumed is included in the total fuel and electricity input on the site, it is not necessary to collect data separately. - GHG emissions due to the combustion of biomass energy sources are regarded as carbon-neutral and shall be excluded from the calculation. [Rules related transport] - The primary data shall be collected as much as possible, either by the fuel consumption method, the fuel cost method, or the ton-kilometer method. See Annex B (normative). [Rules related to wastes] - Wastes discharged from each process shall be included. - When plant residues are landfilled as fertilizer, they shall not be included in “wastes”. The GHG emission generated by the biodegradation of landfilled plant resides shall be regarded as carbon-neutral and shall be excluded from data collection. - For “GHG emissions from waste of packaging materials by incineration,” the GHG emissions derived from biomass are regarded as carbon-neutral and may not be calculated. - Also, the GHG emissions from incineration of food residues are regarded as carbon-neutral and shall be excluded from data collection. - For recycled materials, the GHG emissions of transport process and from recycling preparation processes shall be included. - Indirect effects shall be excluded. [Rules related to recycled materials and reused products] - When recycled materials and reused products are used as inputs, the GHG emissions associated with the recycling processes up to recycling preparations (e.g., regeneration processing, etc.) and the reuse processes (e.g., collection, cleaning, etc.) shall be included.
7	Requirements for the raw material acquisition stage	
7-1	Range of the processes	The following processes shall be covered. - Processes related to the manufacture and transport of > “seeds and seedlings” > “fertilizers” > “agricultural chemicals” > “cultivation materials (wooden, plastic, metallic, stone materials, etc.)” > “packaging materials” * “Packaging materials” related processes may be replaced by “raw material acquisition stage,” “production stage” and distribution stage” of these PCRs; “PA-BB, Paper containers, packaging and wrapping (intermediate goods)” and “PA-BC, Plastic container and packaging”.
7-2	Data collection items	The data on the following items shall be collected: <Input amount of > - “seeds and seedlings,” - “fertilizers,” - “agricultural chemicals,” - “cultivation materials (wooden, plastic, metallic, stone materials, etc.),” and - “packaging materials”.

		<Life cycle GHG emissions> Life cycle GHG emissions related to the manufacture and transport of - "seeds and seedlings," - "fertilizers," - "agricultural chemicals," - "cultivation materials (wooden, plastic, metallic, stone materials, etc.)," and - "packaging materials".
7-3	Primary data collection items	The primary data on the following items shall be collected. <Input amount of> - "seeds and seedlings," - "fertilizers," - "agricultural chemicals," - "cultivation materials (wooden, plastic, metallic, stone materials, etc.)," and - "packaging materials".
7-4	Primary data Collection method and Requirements	There are two measuring methods for primary data. (1) Add up input amount and discharge amount of items, by collecting data of "per operation unit" or "per equipment/facility operation" and "operating hours", "operating area size," or "operating distance". (e.g., Operating time of farm machine of the crop x fuel consumption of farm machine by hour = fuel consumption) - When using this method, consistency shall be checked by adding up and calculate the data output by output, regardless of the boundary of the PCR, comparing with it to the site-total output data. - The operation unit of equipment/facility (e.g., as operating hours, operating area size, operating distance) may be adopted from such information sources as farming diaries, farming management software, and other farming records. (2) Allocating the actual result in specified period among output amount.
7-5	Scenario	[Transport scenario] Regarding transport from a supplier, primary data about the means of transport, the transport distance, and the loading ratio shall be collected. When it is difficult, use scenarios in Annex C (normative).
7-6	Others	[Exceptions when data is collected from multiple suppliers] When raw materials are acquired from multiple suppliers, primary data from all the suppliers shall be collected. However, if there are so many suppliers and the collection of the data are difficult, primary data shall be collected for 50% or more of the total amount. To cover the rest of it, use the average of the primary data for the rest of the data. [Exceptions when data is collected from multiple producers] - Quite many agricultural producers involve cultivation and shipping preparation of bananas. Therefore, the average data of the primary data from part of agricultural producers may be used for agricultural producers whose primary data cannot be collected. - However, to use this method, the primary data shall be collected without any biases, by categorizing all suppliers based on various items such as farm land area, harvest amount, and farming efficiency, and by proving that the sample size of each category is proportional to the distribution of each category. - If any other method is used, its validity to ensure the representativeness of the data shall be verified.

8	Requirements for the production stage	
8-1	Range of the processes	The following processes shall be covered. (1) Cultivation related processes - Necessary processes for banana cultivation in and around farm land, such as “farm land consolidation,” “seeds and seedlings preparation,” “farm land preparation,” “settled planting,” “cultivation management,” “harvesting,” and “cleanup”. > "Farm land consolidation" includes such processes as tillage, harrowing, land consolidation, and fertilization. > "Cultivation management" includes such processes as fertilization (additional fertilization), training of tree, insect pest control, and weed control. > “Harvesting” includes the processes related to harvesting (consecutive/ wholesale). - “Nitrous oxide (N_2O) generation” from nitrogen fertilizers is included in assessment, regarded as associated with these processes. Soil carbon storage in farmland is excluded from assessment. CO_2 absorption by farm land soil has an effect of carbon storage, but there are no internationally agreed procedures for calculating it and also measurement method is not established at the moment. (February, 2011) (2) Shipping preparation processes - Processes to make bananas available for shipping by “weighing,” “packaging,” and “storing” after “adjusting” and “sorting and selecting” by agricultural producers. (3) Transport process - Process of the transport of harvested bananas to “collecting and shipping facility, etc.” (4) Composting process of plant residues - Process that plant residues from each process in the production stage are buried in the soil as fertilizer. (5) Waste treatment process - Process of treating wastes discharged from each process. - As for the ones to be recycled, GHG emissions of the transport process and of up to and including recycling preparation process shall be calculated.
8-2	Data collection Items	(1) Cultivation related processes <Input> - Input amount of “fuels and electricity,” including energy used for pumping up well water. * Input amounts of “agricultural water” and “well water” are excluded from data collection items, because it is assumed as natural water and its life cycle GHG emission cannot be calculated. <Output and Discharge> - Amount of “bananas” input to shipping preparation process

		(No need to deduct the amount of self consumption.) - Discharged amount of “wastes” - Generation amount of “nitrous oxide (N_2O)” from nitrogenous fertilizer (2) Shipping preparation processes <Input> - Amount of “bananas” which are input to shipping preparation process, - Amounts of “fuels and electricity” - Amount of “materials used for shipping” <Output and Discharge> - Output amount of “banana” after shipping preparation process - Discharged amount of “wastes” <Other> - Life cycle GHG emissions related to the manufacture and transport of “materials used for shipping” - Life cycle GHG emissions related to the supply of “fuel” and “electricity” (3) Transport processes - Cargo weight - GHG emissions associated with fuel use (4) Composting process - GHG emission from degrading plant residues are assumed as carbon neutral and the collection of data is unnecessary. - Energy consumption in this process are collected as part of the input amount of “fuel and electricity” in the cultivation related process (No. 8-2, (1)). (5) Treatment process of wastes discharged from each process - Discharge amount of wastes - Life cycle GHG emissions related to the waste treatment and transport - Amount of wastes to be recycled - GHG emissions related to the processes of the transport for wastes to be recycled and of the recycling preparation
8-3	Primary data collection items	The primary data on the following items shall be collected. (1) Cultivation related processes <Input> - Input amount of “fuel and electricity” <Output and Discharge> - Amount of “bananas” input to shipping preparation process (2) Shipping preparation processes <Input> - Amount of “bananas” which are input to shipping preparation process - Amount of “fuel and electricity” - Amount of “materials for shipping” <Output and Discharge> - Output amount of “bananas” after shipping preparation process <Other>

		- Life cycle GHG emissions related to the manufacture and transport of "materials for shipping" - Life cycle GHG emissions related to the supply of "fuel" and "electricity" (3) Transport process - Cargo weight - (in case of fuel consumption method) Amount of fuel used - (in case of fuel cost method) GHG emissions from fuel consumptions per driving distance (5) Wastes treatment process discharged from each process - Discharge amount of wastes (6) Common items of each process - Life cycle GHG emissions related to the supply and use of "fuel" and "electricity" for on-site production, or for the items whose data is not available from the Tentative Database of GHG Emission Factors for the CFP Pilot Project.
8-4	Primary data Collection method and Requirements	Conform to "No. 7-4".
8-5	Scenario	(1) As for the transport to operators of shipping preparation process after harvested bananas, primary data shall be collected about the distance, the means of transport, and the loading ratio. When this is impossible, use scenario in Annex C (normative). (2) As for treatment of waste materials, collect primary data. However, it may conform to the rules provided in PCRs: "PA-BB, Paper containers, packaging and wrapping (intermediate goods)" and "PA-BC, Plastic container and packaging".
8-6	Other	[Exceptions when data is collected from multiple producers] Quite many agricultural producers are involved in cultivation and shipping preparation of products. Therefore, the average data of the primary data from part of agricultural producers may be used for agricultural producers which primary data cannot be collected. However, the properness of choosing the data shall be verified.
9	Requirements for the distribution stage	
9-1	Range of the processes	The following processes shall be covered. (1) Transport related processes - Processes related to transport of products from collecting and shipping facility, through disinfection facility, sales preparation facility and ripening facility, to retail stores and consumers. (2) Disinfection process - Process related to disinfection when Quarantine Pest is found as a result of the inspection pursuant to the Plant Protection Act. (3) Sales preparation process - Processes to make bananas available for sales by "weighing," "packaging" and "storing" after "adjusting" and "sorting and selecting". It includes the process of warehouse storage before shipped for ripening process.

		(4) Waste treatment process - Treatment process of wastes from each process. As for the items to be recycled, GHG emissions of the transport and of up to and including the recycling preparation process shall be calculated. (5) Ripening process - Process related to ripen banana by ethylene, etc. * Processes not existing in actual distribution shall be excluded from the assessment. ** There is a case that a cold chain (refrigerated transport) is used. In that case, it shall be included in the assessment.
9-2	Data collection items	The data on the following items shall be collected. (1) Transport related processes - Cargo weight (bananas) - Amount of “fuels” - Amount of “transport materials” * If conducting a cold chain (refrigerated transport) and using the “improved ton-kilometer method,” collect the data on life cycle GHG emissions related to cold storage. (2) Disinfection processes <Input> - Amount of “disinfected bananas” - Amount of “ materials used for disinfection” - Amount of “ fuels and electricity” (3) Sales preparation processes <Input> - Amount of “bananas” (input amount to sales preparation process) - Amount of “fuels and electricity” - Amount of “tap water” - Amount of “materials for using sales” The input amounts of “fuels and electricity” include the fuel and electricity which are input to the process related to warehouse storage. <Output> - Amount of “bananas” (output amount after sales preparation process) (4) Waste treatment processes "Wastes" shall refer to the ones whose treatment is entrusted to external operators. - Discharge amount of wastes - Life cycle GHG emissions related to waste treatment and transport - Discharge amount of wastes to be recycled - Life cycle GHG emissions related to the transport process and the recycling preparation processes for the wastes to be recycled (5) Ripening process <Input> - Amount of “bananas”

		- Amount of “materials used for ripening” - Amount of “fuels and electricity” (6) Processes related to the manufacture and transport of the inputs to the above processes - Life cycle GHG emissions related to the manufacture and transport of > “transport materials,” > “disinfection materials,” and > “ripening materials” - Life cycle GHG emissions related to the supply of > “fuels,” > “electricity,” and > “tap water”
9-3	Primary data collection items	The primary data shall be collected on following items. (1) Transport processes - Cargo weight (bananas) - Consumption amount of fuels and electricity - Use amount of transport materials (2) Disinfection processes <Input> - Amount of “disinfected bananas” - Amount of “materials used for disinfection” - Amount of “fuels and electricity” (3) Sales preparation processes <Input> - Amount of “Bananas” (input amount to sales preparation process) - Amount of “fuels and electricity” - Amount of “tap water” - Amount of “materials for using sales” <Output > - Amount of “Bananas” (output amount after sales preparation process) (4) Waste treatment processes - Discharge amount of wastes (5) Ripening processes <Input > - Amount of “bananas” - Amount of “materials used for ripening” - Amount of “fuels and electricity”
9-4	Primary data Collection method and Requirements	- Measuring method of fuel usage during distribution shall conform to the “fuel consumption method,” the “fuel cost method,” the “improved ton-kilometer method,” or the “conventional ton-kilometer method,” prescribed in the “Act on the Rational Use of Energy”. - The transport distance may be used actual measurement or information obtained from navigation software. - As for data collection of sales preparation processes, conform to “No.7-4”. - Primary data of each process differ between areas. Therefore, primary data shall

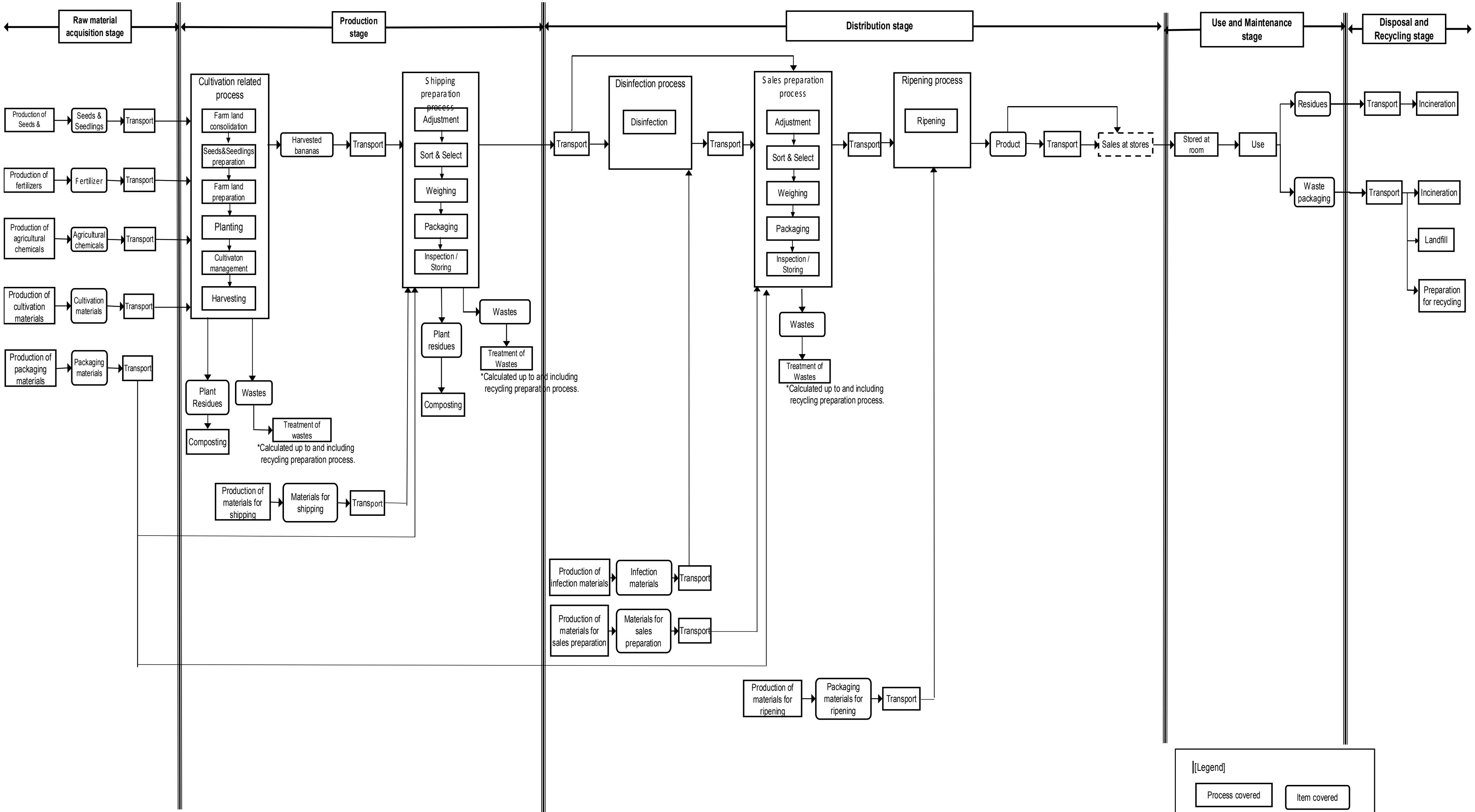
		be basically collected about all transport routes and all process-implemented sites. - When collecting primary data on all routes and all process-implemented sites, or when it is impossible and therefore using representative data, scenario available to be applied, or secondary data to be applied, conform to “No. 9-5”.
9-5	Scenario	(1) Product transport scenario - As for the transport (including international transport) from collecting/shipping facilities to stores/consumers, primary data on distance, means, and loading ratio should be collected. When this is difficult, the transport scenario may be used (Annex C (normative)). - If another scenario is applied, CFP assessment operator shall prepare such evidence ensuring the validity of its application. Regarding the secondary data calculated by such scenario applied by the CFP assessment operator, it shall be verified its validity when CFP verification is conducted. (2) Transport scenario for waste of packaging materials Collect primary data about the distance, the means and the loading ratio. When this is impossible, see Annex C. (3) Treatment scenario for waste materials As for treatment of waste materials, collect primary data. However, it may conform to the rules provided in PCRs: “PA-BB, Paper containers, packaging and wrapping (intermediate goods)” and “PA-BC, Plastic container and packaging”.
9-6	Others	[Special exceptions when multiple transport routes exist.] - When there exist multiple transport routes, collect primary data on all the routes, then weight-average them by the transport amount. - When there are too many transport routes, primary data shall be collected for 50% or more of the total amount of transport. Regarding the routes whose primary data cannot be collected, the averaged value of the primary data which could be collected shall be used as secondary data. - If no primary data is available, the scenario in Annex C (normative) may be applied. [Special exceptions when multiple disinfection sites exist.] - When there are multiple sites implementing disinfection, collect primary data on all the sites, then weight-average them by the input amount used for disinfection process site. - When there are both cases for “the same product but with or without disinfection process,” collect primary data on the disinfection processes implemented for the most recent one year, then average them by the total amount of imported products (whether or not disinfection was implemented). - If there are too many disinfection sites, primary data shall be collected for 50% or more of the total amount of imported bananas, and regarding the sites whose primary data cannot be collected, the averaged value of the primary data which could be collected shall be used as secondary data. [Exceptions when multiple ripening sites exist.] - When there are multiple ripening sites, collect primary data on all the sites, then weight-average them by the input amount. - When there are too many ripening sites, primary data shall be collected for 50%

		or more of the total amount of ripened bananas, and regarding the sites whose primary data cannot be collected, the averaged value of the primary data which could be collected shall be used as secondary data.
10	Requirements for the use and maintenance stage	
10-1	Range of the processes	In this PCR, there is no process which emits GHG in the use and maintenance stage of raw banana. Therefore, no process is covered.
10-2	Data collection items	Not stipulated.
10-3	Primary data collection items	Not stipulated.
10-4	Primary data Collection method and Requirements	Not stipulated.
10-5	Scenario	Not stipulated.
10-6	Other	Not stipulated.
11	Requirements for the disposal and recycling stage	
11-1	Range of the processes	The following processes shall be covered. (1) Transport of waste of packaging materials and food residues from household to waste treatment facilities (2) Incineration of waste of packaging materials and food residues at waste treatment facilities (3) Landfill of waste of packaging materials and food residues at waste treatment facilities (4) Transport process and recycling preparation process of waste of packaging materials to be recycled and food residues
11-2	Data collection items	The following data shall be collected. <Waste of packaging materials> - Disposal amount of "waste of packaging materials at home" - Amount of waste of packaging materials incinerated at waste treatment facilities - Amount of waste of packaging materials landfilled at waste treatment facilities - GHG emissions related to the "transport of waste of packaging materials to waste treatment facilities," "incineration at waste treatment facilities (other than CO_2 emissions from waste of packaging materials)," and "landfill of waste packaging materials at waste treatment facilities" - GHG emissions deriving from waste of packaging materials by incineration - Amount of "waste of packaging materials" to be recycled - GHG emissions related to the transport process and the recycling preparation process of "waste of packaging materials" to be recycled <Food residues> - Disposal amount of "inedible portions of food residues from home" - Amount of food residues (inedible portions) incinerated at treatment facilities - Amount of food residues (inedible portions) landfilled at treatment facilities - GHG emissions related to the "transport for food residues (inedible portions) to treatment facilities," "incineration at treatment facilities (other than CO_2 emissions from food residues (inedible portions)," and "landfill of food residues (inedible portions) at treatment facilities"
11-3	Primary data collection items	Primary data on the following item shall be collected. - Disposal amount of waste packaging materials at home.

11-4	Primary data Collection method and Requirements	- For the amount of waste of packaging materials disposed at home, weight of packaging materials included in the product sales unit shall be used, since it is assumed that all of the packaging materials used in the product will be disposed. - Regarding GHG emissions from waste packaging materials by incineration, all carbon contained in the waste packaging materials may be considered to be all emitted as CO_2. Regarding the carbon content in waste packaging materials, the weight ratio of materials in product specifications may be multiplied by the carbon quantity in the materials unit quantity based on the chemical composition. - The disposal amount of food residues shall refer to the disposal amount of inedible portions, and may be used the rate specified in the disposal scenario of inedible portions of food residues. - Local differences and seasonal variations shall not be considered.
11-5	Scenario	(1) Disposal scenario of inedible portions of food residues Regarding the disposal amount of inedible portions of foods from home, it is preferable to collect primary data. However, it may be calculated by using the scenario below: - The rate of inedible portions uses the disposal rate specified in the "Standard Tables of Food Composition in Japan: Fifth revised and enlarged edition" (The Ministry of Education, Culture, Sports, Science and Technology). > Disposal rate of (raw) bananas = 40％ (2) Waste transport scenario Regarding the calculation of GHG emissions related to the transport of waste packaging materials and food residues (inedible portions) from home to treatment facilities, it is preferable to collect primary data but the scenario in Annex C (normative) may be used instead. (3) Waste treatment scenario Regarding the disposal methods for the waste packaging materials and food residues (inedible portions) transported to disposal facilities, it is preferable to collect the primary data but the following scenario may be used. The following assumptions are applied from the current status of disposal of general waste described in the "State of Discharge and Treatment of Municipal Solid Waste in FY 2006" (surveyed by the Ministry of the Environment). - 92% of the packaging waste is incinerated - 3% is directly landfilled - 5% is recycled
11-6	Others	[Special exceptions related to allocation] - When collecting primary data on the "amount of GHG emissions related to transport of waste of packaging materials to treatment facilities" and the "amount of GHG emissions related to transport of food residues (inedible portions) to treatment facilities," GHG emissions for multiple routes are obtained as data for the total combined weight with other waste. For the amount of GHG emissions for multiple routes, the total amount of GHG emissions shall be allocated based on the transported weight for each route and included in the amount of GHG emissions related to transport per unit weight. The amount of GHG emissions related to transport per unit weight, which is data for the total combined weight with other types of waste, shall also be allocated to different types of waste based on allocation by weight and included in the amount of GHG emissions related to transport per unit weight covered by this PCR.

		- When collecting primary data for the "amount of waste of packaging materials incinerated at waste treatment facility", the "amount of waste of packaging materials landfilled at waste treatment facility," the "amount of food residues (inedible portions) incinerated at waste treatment facilities," and the "amount of food residues (inedible portions) landfilled at waste treatment facilities," the ratio between the incinerated amount and the landfilled amount is obtained as data for total weight including other types of waste. The incinerated amount and the landfilled amount of the waste of packaging materials shall be calculated based on allocation by weight, using the total incinerated amount and the total landfilled amount at multiple sites.
12	Items applied secondary data	- The data provided by the "Tentative Database of GHG Emission Factors for the CFP Pilot Project". - The data prepared as "reference data" by the CFP Pilot Project Secretariat, among the secondary data which is not included in the "Tentative Database of GHG Emissions Factors".
13	Communication requirements	
13-1	Unit to be displayed on the label	- Use calculation unit (per 100g). - The communication method described in the "Guidelines" and the "Standards of PCR development" may be used, but in this case, its appropriateness shall be discussed on the CFP verification panel.
13-2	Label position and size	- It conforms to the "Specifications of CFP Label and Displaying Other Information," the common rules specified in another paper. - Regarding CFP label position, in the case of selling packaged products, CFP label shall be on the package, and in the case of selling not-packaged products, CFP label shall be attached on the product itself. The label may also be displayed on POP, brochure, or the Internet. - Regarding display of CFP value, "per 100g" of bananas shall be stated, and the primary data collection period of the cultivation related processes shall also be indicated.
13-3	Contents of additional information	- "Per unit weight" (per 100g) is specified as the unit of this product. Therefore, the total CO_2 emissions for each sales unit of bananas shall be disclosed on the website managed by the CFP Pilot Project Secretariat (http://www.cfp-japan.jp/). When displaying weight additionally, relevant laws and regulations shall be taken into consideration. - Additional information on the reduction amount in the past year(s) of the same product or of the product considered as similar by the same operator may be displayed. Also, additional information on the reduction amount by reduction efforts, and on the value per process, can be displayed, to expect the effects on promoting reduction efforts of individual operators of each process. Additional information on the rate of primary data collected from production sites can be displayed. - Regarding displayed contents of additional information (for example, the display of reduction amount includes GHG emissions before reduction), it may be displayed only the contents acknowledged as appropriate by the CFP verification panel.

Annex A (normative): Life cycle flow chart



* All processes related to the supply and use of "fuels" and "electricity" are omitted from this flow chart since they are common in all the life cycle stages.

Note: "Sales process (Sales at stores)" in the distribution stage is provisonally excluded from the assessment until its proper calculation method is finally established.

Annex B (normative): Calculation method for GHG emissions associated with fuel consumption during transport

B.1 Fuel consumption method

1) Collect data on fuel consumption [L] for each mean of transport, and convert the fuel unit, “L,” to “kg” by using following equation.
   Fuel consumption [kg] = Fuel consumption [L] x fuel density “γ” [kg/L]
   Fuel density of gasoline: γ = 0.75kg/L
   Fuel density of light oil: γ = 0.83kg/L
2) Calculate life cycle GHG emissions [kg-CO_2e] by multiplying fuel consumption [kg] and the “life cycle GHG emissions related to supply and use of fuel” [kg-CO_2e/kg] (secondary data) for each type of fuel.

B.2 Fuel cost method

1) Collect data on fuel cost [km/L] and transport distance for each mean of transport, and calculate fuel consumption [kg] by using the following equation.
   Fuel consumption [kg] = transport distance [km] / fuel cost [km/L] x fuel density “γ” [kg/L]
2) Calculate life cycle GHG emissions [kg-CO_2e] by multiplying fuel consumption [kg] and the “life cycle GHG emissions related to supply and use of fuel” [kg-CO_2e/kg] (secondary data) for each type of fuel.

B.3 Improved ton-kilometer method

1) Collect data on loading ratio [%] and transport load (transport ton-kilometer) [t-km] for each mean of transport.
2) If the loading ratio is unknown, assume it to be 62%.
3) Calculate life cycle GHG emissions [kg-CO_2e] by multiplying the transport load (transport ton-kilometer) [t-km] by the “life cycle GHG emissions related to fuel consumption per transport ton-kilometer” [kg-CO_2e/t-km] (secondary data) for different transport loads for each mean of transport.

B.4 Conventional ton-kilometer method

1) Collect data on transport load (transport ton-kilometer) [t-km] for each mean of transport.
2) Calculate life cycle GHG emissions [kg-CO_2e] by multiplying the transport load (transport ton-kilometer) [t-km] by the “life cycle GHG emissions related to fuel consumption per transport ton-kilometer” [kg-CO_2e/t-km] (secondary data) for each means of transport.

The Conventional ton-Kilometer method may be used only for transport by ship, plane, and train.

Annex C (normative): Transport scenario

In this PCR, transport scenarios are set for cases where primary data is not available.

Life cycle stage	Scenario
Raw material acquisition stage	(1) Manufacturer of inputs of cultivation-related processes in the production stage => Agricultural producer (e.g., Fertilizer manufacturer => Agricultural producer) <Transport distance> 500km <Means of transport> 10-ton truck <Loading ratio> 62%
Production stage	(1) Agricultural producer => Collecting and shipping facility (e.g., Agricultural producer => Collecting and shipping facility) <Transport distance> 20km <Means of transport> 2-ton truck <Loading ratio> 17% (2) Producers of inputs in the shipping preparation process => Operator of shipping preparation process (e.g., Producers of packaging materials for shipping => Collection and shipment facility) <Transport distance> 500km <Means of transport> 10-ton truck <Loading ratio> 62%
Distribution stage	(1) Producers of inputs in the processes of disinfection, ripening, and sales preparation => Operator of each process (e.g., Producers of packaging materials for shipping => Distribution center of mass retailer, etc.) <Transport distance> 500 km <Means of transport> 10-ton truck <Loading ratio> 62 % (2) Operator of shipping preparation process => Operator of disinfection process (e.g., Collecting and shipping facility => Loading port => Unloading port) a) Land transport <Transport distance> 2,000km <Means of transport> 10-ton truck <Loading ratio> 62% b) International maritime transport <Transport distance> Navigation distance from loading port to unloading port < Means of transport > Container ship (4,000TEU or more) (3) Operator of disinfection process => Operator of ripening process (e.g., Unloading port => Ripening processing site) <Transport distance> 500km <Means of transport> 10-ton truck <Loading ratio> 62%

	(4) Operator of ripening process => Operator of sales preparation process (e.g., Ripening processing site => Distribution center of mass retailer, etc.) <Transport distance> 500km <Means of transport> 10-ton truck <Loading ratio> 62% (5) Operator of sales preparation process => Sellers in store or Consumers (e.g., Distribution center of mass retailer, etc. => Stores of mass retailer) <Transport distance> 500km <Means of transport> 10-ton truck <Loading ratio> 62% (6) Stores => Waste treatment facility <Transport distance> 50km <Means of transport> 10-ton truck <Loading ratio> 62 %
Disposal and Recycling stage	(1) Transport from garbage dump place to waste treatment facilities <Transport distance> 50km <Means of transport> 10-ton truck <Loading ratio> 62%

Assumptions for each scenario are as follows:

C.1 Transport distance

Transport distances are set at longer possible distances rather than at an average distance, to provide an incentive for primary data collection.

- Domestic transport in Japan
  - (a) Transport within a city, town, or village: 20km
    [Assumption] The distance longer than 14.5km is assumed. 14.5km is the square root of 209.27km^2, the average size of area of the cities, towns, and villages in Japan (The value comes from the Investigation by the Geographical Survey Institute, as of April 1, 2009).
  - (b) Transport within a city or not across adjacent cities: 50km
    [Assumption] The distance from a prefectural center to a prefectural border is assumed.
  - (c) Transport within a prefecture: 100km
    [Assumption] The distance from a prefectural border to another side of the border is assumed.
  - (d) Transport possibly across prefectural border to another side of the border is assumed.: 500km
    [Assumption] The distance from Tokyo to Osaka is assumed.
  - (e) Transport from producer to consumer (consumption place is not limited within a specific area): 1,000km
    [Assumption] The distance a little longer than half Honshu (the main island of Japan: 1,600km) is assumed.

- Domestic transport in overseas producing countries
  - (a) Transport of inputs in cultivation process and shipping preparation process
    [Assumption] The distance from a state border to a state center is assumed.
  - (b) Transport of harvested bananas from Agricultural producer to Collection and shipment facility: 20km
    [Assumption] The distance within the same city or ward is assumed.
  - (c) Transport from Collection and shipment facility to Loading port: 2,000km
    [Assumption] Double the distance from a state border to another side of the border is assumed.

- International transport
  As for navigation distance between countries, use the reference data prepared by the CFP Pilot Project Secretariat.

C.2 Means of transport

Truck transport is basically assumed for an incentive to take CO_2 reduction measures in distribution such as modal shift. Large vehicles were set for distributors and rather small ones for others.

(a) Transport by distributor: 10-ton truck

(b) Transport by agricultural producer: 2-ton truck

C.3 Loading ratio

Values to be applied when loading ratio is unknown were taken from the following table in the "Common guideline Ver.3.0 for the calculating method of CO_2 emissions in logistics," a notification by the Ministry of Economy, Trade and Industry and the Ministry of Land, Infrastructure, Transport and Tourism.

Table: Values to be applied when loading ratio is unknown

<table>
<tr><th rowspan="3">Vehicle Type</th><th rowspan="3">Fuel</th><th rowspan="2" colspan="2">Maximum Load (kg)</th><th colspan="2">When loading ratio is unknown</th></tr>
<tr><th colspan="2">Average loading ratio</th></tr>
<tr><th></th><th>Median</th><th>For household</th><th>For business</th></tr>
<tr><td rowspan="3">Light, compact and ordinary trucks</td><td rowspan="3">Gasoline</td><td>Light trucks</td><td>350</td><td>10%</td><td>41%</td></tr>
<tr><td>1,999 or less</td><td>1,000</td><td>10%</td><td>32%</td></tr>
<tr><td>2,000 or more</td><td>2,000</td><td>24%</td><td>52%</td></tr>
<tr><td rowspan="8">Compact and ordinary trucks</td><td rowspan="8">Light oil</td><td>999 or less</td><td>500</td><td>10%</td><td>36%</td></tr>
<tr><td>from 1,000 to 1,999</td><td>1,500</td><td>17%</td><td>42%</td></tr>
<tr><td>from 2,000 to 3,999</td><td>3,000</td><td>39%</td><td>58%</td></tr>
<tr><td>from 4,000 to 5,999</td><td>5,000</td><td rowspan="5">49%</td><td rowspan="5">62%</td></tr>
<tr><td>from 6,000 to 7,999</td><td>7,000</td></tr>
<tr><td>from 8,000 to 9,999</td><td>9,000</td></tr>
<tr><td>from 10,000 to 11,999</td><td>11,000</td></tr>
<tr><td>from 12,000 to 16,999</td><td>14,500</td></tr>
</table>

[PCR revision histories]

Approved PCR ID	Release date	Contents revised
PA-BJ-02	September 17, 2010	(1) Changed corresponding to the revisions of the basic rules. (2) Adapting the contents to the new PCR draft template. (3) For handling of recycling of the wastes discharged from each stage (other than the disposal and recycling stage,) up to and including recycling preparation process shall be calculated. (It applies mutatis mutandis to “No.2-(7): Handling of recycling standards” provided in the “Standards of PCR development”.) (4) For handling of the wastes collected for value, up to and including the recycling preparation process shall be calculated. (It applies mutatis mutandis to “No.2-(7): Handling of recycling standards” provided in the “Standards of PCR development”.)
PA-BJ-03	February 3, 2011	(1) “No.4. Terms and Definitions”: revised descriptions of “standard weight” (2) “No.13-3. Contents of Additional Information”: added additional displays of weight.