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On the concept of 'circulation' in Palestine

Since last year, I have been working with a JICA technical cooperation project. Its stated objective is to "The project for strengthening support system focusing on sustainable agricultural in the Jordan River Rift Valley". During this period I have had several opportunities to visit the West Bank in Palestine. Here we are exploring and examining measures to stabilize agricultural production and business (including extension and strengthening this sector). We are working in difficult conditions and have limited options due to the ongoing occupation of the territory by Israel. I am in charge of the livestock sector, and one of this initiative's priorities is to facilitate a 'break free' move from a production system that is currently largely dependent on commercially supplied fodder. Livestock production is a pivotal focus in our effort to explore the organic linkages between crop farming and livestock husbandry. A key element in the ideas we are exploring is the concept of "circulation*".

With the recent hike of crude oil prices, an increasing number of Palestinian farmers are opting for low-cost and stably priced sources of livestock fodder, moving away from their dependence on expensive grain concentrates. There are a number of possibilities regarding self production of animal fodder by individual farmers or groups of farmers at the regional level. These include the introduction of leguminous grass species, production of fodder from mushroom culture beds, improvement in pasture land by enhancing/introducing water harvesting techniques, use of waste from crops and production of storage fodder in the form of silage, feed blocks etc.. The fundamental principle is to produce fodder from unused or under used resources.

This is based on a re-evaluation of natural resources around settlements, and for this it is necessary to develop and consolidate suitability testing methods and local technologies for establishing resource circulation systems. In Palestine, there has been a traditional integrated livestock management system that combines barley cultivation and sheep and goat rearing. We are aiming to stabilize the livestock production business based on traditional systems that use local resources effectively. For Palestinian famers, such an integrated system is a result of rediscovering the sense of circulation, seeing resources being squandered and feeling "*Mottainai*" in Japanese.

Producing silage from crop waste



Converting mushroom beds/logs into livestock fodder



Grazing in the Jordan Valley

This spirit of starting from individual and local levels to achieve circulation in Palestine is the same as the spirit people had in Japan whether it was during the good old agricultural system in the country prior to the fast economic growth or now in the modern organic agriculture movement. The term "circulation" may be one of those which touch Japanese people's hearts. In recent years, "circulation technology" has been discussed in a variety of fields and industries and, in a way, the term is over used and sometimes abused as a beautifully sounding 'key word'. For example, how can we interpret the word when used in the context of breaking out of dependency on imported cereal fodder such as maize and soy beans? Massive imports of cereal fodder from abroad and intensification of livestock farming have resulted in an accumulation of livestock waste. I have a problem when people talk thoughtlessly about circulation when discussing the issue of "waste management" of materials that are brought into the country in large quantities. The fundamental prescription should be to remove pressure on the environment by reducing cereal imports and increasing the share of domestically produced fodder. Emphasizing the need for a circular society without tackling the real problem is distorting the real issue.

Kenya's Nobel Peace Prize Winner, Ms Wangari Matthai's "*Mottainai*" spirit can be described with 3 Rs – Reduce, Reuse and Recycle. I would say that "Reduce" should be the most important element of the 3R approach followed by "Reuse". What is required for the Japanese people who are immersed in a materialistic society is firstly to reduce and start navigating towards a "low environmental impact path." (By Koga, April 2009)

NOTE: Circulation involves the re-use of materials perceived as waste in a fashion that re-introduces them into a working and productive system.