

ABSTRACT

The inadequate management of solid waste causes environmental and social problems that can be minimized by realizing sustainable practices in communities. In Japan, some communities are taking active role in efforts to achieve sustainability on regional scale. In Fujinomiya city, Konohana Family, a community of 56 members (at January, 2010); nowadays, known as an ecovillage, is challenging to be a sustainable community. An ecovillage is considered the newest and most potent kind of sustainable community. Although ecovillage definitions do not indicate a specific way to manage solid wastes, Konohana ecovillage is challenging its safe management by implementing sustainable practices.

This research determines the physical characterization of Konohana's solid wastes and its mass balance. Each villager generates 0.4 kg of waste per day; where approximately 70% are kitchen scraps, 11% recyclable materials, 5% reused textiles, and 14% burnable wastes. If a reduction of 50% of burnable wastes could be attained, the self-sufficiency in waste management would be 93%. To achieve it, the ecovillage approach adopted by Konohana Family plays a vital role in balancing the sustainable consumption and the waste reduction.

As solid waste management is closely linked not only technical but also social aspects, it should be studied based on systems thinking approach. Thus, through a causal loop diagram this research analyzes the solid waste management at Konohana ecovillage. It is identified eight interactions shown as loops. One is reinforcing loop and seven are balancing ones, describing the reality through causalities between variables and how they form a dynamic circular influence as well as indicating vulnerable interactions that may be influenced by the community decision making towards sustainability. In conclusion, the community members conceive the issue of solid waste management as priority, based on a sustainable visualization that consists in achieving an evolution from material to spiritual necessities; minimizing social and environmental impacts. However, long-term studies are necessary to monitor achievements in sustainability at Konohana Family.

Key words: Assessment, solid wastes, management, ecovillage, Konohana Family.