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Perception of Traditional Small Scale Brick-making owner on firewood usage for Brick-making process

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Abstract

Traditional brick-making industry – traditional kilns that use firewood as burning fuel have been assumed to be energy-inefficient and polluting and may have negative influence on global warming and environmental sustainability. This study was intended to investigate small scale traditional brick-making owner's perception on firewood usage in relation to environmental sustainability. Ten small scale brick-making owners were selected randomly to be depth-interviewed.

The results reveal that brick-making owners have had awareness on environmental issues and realize the drawback of firewood usage but, they find that it is still difficult and expensive to find another source fuel to fire their brick kiln.

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1. Introduction

Global warming has become the main concern of environmentalists as well as other related stakeholders (Alam & Starr, 2009; Baird, 2009; Bhattacharjee, 2010; Lastarria-Cornhiel, Feijoo, et al., 2012). Environmentalists claim that the global warming has created bad condition of environment. The global warming is predicted to worsen environment and life quality of all creatures (Blom, Sunderland, et al., 2010; Gonzales, Gallan et al., 2011). Global warming means

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increase in world's surface and environment temperature due to greenhouse effect (Bhattacharjee, 2010). In such situation, many aspects of environmental deteriorate and all of life creatures including human being face difficulties.

Although the global warming may be caused by environmental natural condition such as volcanoes activities, human being business activities such as fossil fuel usage in transportation and manufacturing sector also stimulate the increasing of the global warming (Alam & Starr, 2009; Baird, 2009; Bhattacharjee, 2010; Blom & Sunderland, Gonzales et al., 2011). The fossil fuel burning activities release CO² in the air and create glass-effect condition and gradually increase heat intensity in the world. The continuous release of carbon emission potentially degrade environmental condition (Agrawal & Ostrom, 2008).

One of the human being business activities that is claimed to be environmentally unfriendly is the usage of firewood in traditional brick making industry (Alam & Starr, 2009; Wood, 2005). Using firewood in brick-making industry – traditional kilns that use firewood as burning fuel have been assumed to be energy-inefficient and polluting and may have negative influence on global warming and environmental sustainability (Alam & Starr, 2009; Wood, 2005).

The traditional brick making industry has a positive influence in supporting construction development and source of income for micro and small scale business owner as well as create employment for uneducated and unskilled labour (Alam & Starr, 2009). Micro, small and medium enterprises have historically been the main players in domestic economic activities (Ekoputri, Widyadari, et al., 2007; Tambunan, 2008; Tambunan 2010), especially as large providers of employment opportunities, and hence as generators of primary or secondary sources of income for many households (Beck, Demircuc-Kunt, et al., 2005; Tambunan, 2010; The World Bank, 2011; Woo & Hong, 2010). Demand for brick is increasing in accordance with development of construction activities, so the industry is potentially generate employment (Franco, Cushman et al., 2004; Wood, 2005). As the brick making process is a labour intensive industry and does not need skilled labour, the industry is an alternative source of employment in the long run period for uneducated person.

The use of firewood in the traditional brick making industry, however, threatens environmental sustainability (Baird, 2014; Blom, Sunderland et al., 2010) and speed up global warming phenomenon (Alam & Starr, 2009; Manton, Health et al., 2011; Thahir, 2010). Using firewood kilns will use large quantities of wood and lodge that could lead to deforestation (Agrawal & Ostrom, 2008; Beamish & Donovan, 1993; Manton, Health et al., 2011). Approximately 3 m³ of firewood is needed to fire 1000 bricks (Beamish & Donovan, 1993) which means around 30 m³ to produce 10000 bricks. Consequently, much firewood is needed in producing bricks.

Traditional brick-making process around Gowa regency uses firewood which mainly comes from Jeneberang watershed forest area. Although no research has been done to study the relationship between firewood usage and activity of tree cutting around the Jeneberang watershed, the upstream of Jeneberang River are becoming critical (Thahir, 2010). Assuming that 10000 bricks are produced a day, so around 30 m³ wood are needed a day which means many trees are to be cut.

In order to minimize the usage of firewood or at least finding more sustainable source of firewood in the brick making process, the traditional brick producers need environmental producing practice awareness (Al-Abdulah, 2009). The environmental sustainability awareness will lead the brick producers to do their business by considering all negative impacts of their producing activities on environment (Agrawal & Ostrom, 2008). So, the awareness is very important for doing environmental friendly business.

The first step to assess the awareness of the brick producers is to investigate their perception on firewood usage during brick production process (Gonzalez, Galan et al., 2011). Individual opinion on certain circumstance will lead to certain behavior either environmentally friendly or unfriendly (Desser, Ulbeck et al, 1989; Gonzalez, Galan et al., 2011). The opinion will create unconsciously effort to act in responding to certain activity (Premak, 1990) and transform the practice of production (Sorfontein, 2006).

The study is intended to assess environmental awareness of traditional brick producers around Jeneberang watershed. The research questions relate to the brick producers' perception of firewood usage on environmental impacts. Finding the brick producers' perception on firewood usage will be very useful in order to identify some alternatives actions to create environmentally friendly brick making activities.

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