Introduction:

Agriculture and animal husbandry (Patil et al., 2010) are prime businesses and major source of income as well as employment in India (Bhagat and Kadam, 2001). Two-third of the total population and three forth of total workforce of India is dependent upon agriculture (Bhagat, 2002). Majority of the farmers is keeping animals for milk, meat, leather, bones and dung-manure, etc. as support business to the agriculture; some of the farmers are keeping animals as main business traditionally. In India, about three-fourth of the population is living in rural areas and about 38% of them are poor (Karmarkar and Banerjee, 2006). The animals are main source of proteins and income to the poor population (FAO, 2006; Patil et al., 2010) and one of the ways of poverty alleviation (Seife et al., 2012). Dairy farming is important source of income to small landholders of dry, drought-prone and mountains areas (Bohra et al., 2001; Karmarkar and Banerjee, 2006). The women from tribal and hilly areas are managing the production and marketing of the milk (Deshmukh, 2012).

The farmers in the countries like USA, India, China, etc. are keeping dairy animals for economic stability (Cabrera et al., 2010). This business can be established at the lowest possible investment compared to other industries (Deshmukh, 2012). However, in European countries small scale dairy farmers are being closed their farms for conversion to large scale for maximizing the milk production (Glauben et al., 2003).

Europe, America and Asia have improved nutritional and heath condition of animals i.e. well feeding, improved genetic qualities, breeding techniques etc. are responsible to increasing milk production (Ogbimi and Oyewale, 2000). However, the demand for products from animal husbandry would be doubled by the year 2050 (Gerber
and Steinfeld, 2007). The gap between growth of milk production (3%) and demand (6%) (Chawla, 2009) is showing ample scope for dairy farming.

India is the largest milk producing country (13%) is ranked first in number of animals and milk production (Karmarkar and Banerjee, 2006; Shinde, 2011). The share of herds keeping is 21% out of agriculture produce in India. According to Livestock Census of India (2003), total number of pet animals is 485.00 million out of which 283.10 million (58.37%) are cattle related to milk production. Buffaloes (one third of total milking animal) are more efficient than cows contributing half milk output of India (Ogbimi and Oyewale, 2000). Uttar Pradesh, Rajasthan, Gujarat, Maharashtra, Karnataka are the leading milk producing states in the country (Shinde, 2011). In Maharashtra, the total number of pet animals was 36.76 million (Livestock Census of Maharashtra, 2003), out of which 22.45 million (61.07%) were related to milk production. The number of milking animals is 13.19 million.

The climatic conditions in tropical countries doesn’t have special problem in improvement of live stack inefficiency but managerial practices are important, tested in Latin America (Ogbimi and Oyewale, 2000). About 70 million dairy farmers in India possess either one or two cows or buffaloes mainly for self sustenance. The landless dairy farmers are rearing low productive cattle dependent upon grazing on public or government lands (Chauhan, 2006).

The farmers in the study area are tribal, keeping local breeds of cows (Dangi) and buffaloes for milk, meat, dung, energy, etc. dependent on grazing. However, they are earning very meagre amount of production and income. Most of the time, the production is not enough for marketing operations. This is major source of income to these farmers is
not sufficient to maintain their livelihood. They have to manage all kinds of expenses i.e. food, clothing, education, health, etc. in this small amount of income. Therefore, the living standard of people in the study area is very poor.

Live stock holding, land holding, dairy type, herd size, family labour utilization, annual family income, family milk consumption, pattern, inter calving period, cost of milk production, cropping pattern, feeding practices, productivity, access to market, market channels, employment, profitability, output-input relationship and constraints, etc. are major variables of dairy farming (Shinde, 2011). These variables would be taken into account in the present study to develop the dairy based model for sustainable development of tribal people in upper Pravara basin in Maharashtra (India).