Pliny (300 B.C.) had aptly described a human example to show how important are trees in maintaining soil integrity and structure in the ecosystem. While narrating the origin of agriculture he wrote that man discovered corn in the wilderness and started raising its crop on vast areas on a hill-top deep in forest. After a few years practice, all ended up in a great catastrophe as no more corn crop could be raised because there was no more soil left to sustain cultivation. This legendary example must be taken as a lesson by the modern civilized society which has indulged in an indiscriminate land use for its activities.

After the World War - II, there has been a tremendous change in the global scenario in political, economic and social aspects. The pace with which urbanisation and
industrialisation has been taken up by Nations acquiring independent sovereignty, was though crucial for development, has created numerous hazards to their ecology and environment. The developmental activities accompanied with population explosion in the third-world countries have created shortages of land, principally, for agriculture and forestry. Enlargement of land use for food production has directly affected production of timber fuel and fodder besides creating ecological imbalance. Increased use of land for tree plantations has been identified as the just remedy to overcome the ills of industrialised civilization. Viable propositions for thoughtful land use management have come in the form of social forestry, environmental forestry and agro-forestry practices. Here, an up date on the state of art in agro-forestry is given.

King (1979) has defined agroforestry as a sustainable land management system which increases the use of the land, combines the production of crop and forest plants and/or animals simultaneously or sequentially, on the same unit of land, and applies management practices that are compatible with the cultural practices of the local people. He further extended this definition to include agri-silviculture, sylvo-pastoral, agro-sylvo-pastoral, and multipurpose forest tree production systems as components of agroforestry. Long before this definition it was quite well conceived that better land use management systems need to be devised and put in practice (Phillips, 1946). Griffith (1947) proposed the term 'farm forestry', and defined it as a practice of forestry on farmlands more or less integrated with other farm operations. Growing trees on farmlands would accrue economic benefits in the form of wood (timber & fuel) and
fodder, as well as provide protection to crops against winds, storms, hails and snow, and soil erosion. The proposition for adopting co-cultivation of trees and farm crops generated interest in planners, administrators, and researchers in the fields of agriculture and forestry, everywhere. Several conceptual frameworks for planning and evaluating agro-forestry systems have since then been put forth in USA (Michael, 1986; Mendoza et al., 1986 & 1987), Australia (Knowles, 1972; Batini, 1977; and Cameron et al., 1989). and United Kingdom (Doyle et al., 1986; and Carruthers, 1988). Conscious evaluation of the suitable forms of agroforestry systems have also been made in Zambia (Hans, 1985), Tanzania O’Kting’, Ati & Mongi, 1986), Nigeria (Osemeobo, 1987), and India (Dhillon et al., 1979 & 1982; Sidhu, 1984; Reddy & Ramanathan Chetty, 1984; Nair & Sreedaran, 1986; Shankarnarayan et al., 1987; and Lahiri, 1989). The suggestions incorporated in these propositions of agroforestry mainly consider (1) temporal and spatial dimensions, (2) multiple objective uses of the land, and (3) multiple and integrated production of forest and agricultural crops. Mendoza et al. (1986) proposed that planning framework and multiple objective programming can be useful tools for the optimal allocation of the land to a variety of alternative cropping systems.

Experimenting with selected forest trees and agricultural crops requires long and sustained efforts for drawing any conclusions about the system and profitability of the practice. Therefore, observations have been mostly recorded by intercropping an agricultural crop either in existing forest stands or in horticultural tree plantations. In certain studies the influence of trees planted or left to grow on field bunds as shelter belts have been assessed on the agricultural crops. Schreiner and Baggio (1984) have
reported that maize can be intercropped in *Pinus taeda* stands at 50,000 plants/ha for 2 years only. Later it affects the growth of pine and returns low corn yield. Similarly, Chingaipe (1985) and Ahimana & Maghambe (1987) have obtained intercropping data on maize yields in *Eucalyptus camaldulensis* and *E. tereticornis*, respectively. They observed that the tree species were compatible with maize, sorghum and beans. The production data of trees satisfied the initial objective of providing high volume of fuel wood and pole yields under short rotations. Successful results have been reported for the intercropping of maize, wheat and soybean with *Paulownia elongata* in the plains of China (Zhu, 1988); maize and cluster beans with *Leucaena leucocephala* in north India (Mittal and Singh, 1989); maize with *Prunus capuli* and *Juniperus deppeana* in Mexico (Farell, 1990); and soybean with *Leucaena* in Indonesia (Siregar et al., 1984).

Alley farming combining agricultural crops in rotation with *Leucaena leucocephala* has shown good potential as an agroforestry system in Africa. Kang et al. (1985) have evaluated the potential of alley cropping maize and cowpea with giant *Leucaena*, cultivar K-28 on an Entisol in Southern Nigeria. This system has also been found suitable in the coastal areas of Kenya (Getahun & Jama, 1986), and in the humid regions of West Africa (Sumberg and Atta-Krah, 1988). In the alley cropping system prunings of *Leucaena* provide green manuring to crops besides increasing the moisture holding capacity of the field soil. The system also returns objective economic benefits to the farmer.

An interesting data on a rather unusual agroforestry practice has been presented by Poschen (1986) from the Hararghe highlands of Eastern Ethiopia. In an experiment
maize and sorghum crops were grown directly under the canopy cover of *Acacia albida*, that naturally grows on farmlands there, and simultaneously the crops were also grown in the open. They recorded 56% increase in crop yield for the crops under the tree canopies in comparison of the one grown in the open. The increased crop yield showed that the tree enhanced fertility status of soil and improved its physical conditions in terms of crop growth. Another important feature of *A. albida*, that helped good crop yield, would be its habit of remaining leafless during the crop season which allowed sufficient light intensities to pass beneath its canopy cover. Additional benefits accruing to farmer from *A. albida* include supply of fuel wood and fodder.

Coconut, arecanut and rubber are plantation crops that utilise a sizeable proportion of cultivable farmlands in tropical countries. Intercropping of short duration agricultural crops like soyabean with coconut (Liyanage, 1987), and rubber (Laosuwan et al., 1987) has been recommended. Crops such as cocoa, coffee and pepper as well as cinnamon, cloves, cardamom and ginger have also proved compatible with coconut, arecanut, rubber and *Cordia alliodora* plantations (Sefanaia et al., 1982; Mathes, 1986; Bastine et al., 1986; Sing et al., 1986; Somarriba & Beer, 1987; Bhat, 1988; Sannammarappa and Shivashankar, 1988; Sing et al., 1988; and Sivadasan and Nair, 1989).

Some efforts to demonstrate and assess the benefits of agroforestry have been made on agricultural lands too. In a study Fowler & Ffolliott (1986) have estimated biomass production of *Prosopis juliflora* with intercropping of barley and reached a conclusion to suggest that this dual cropping system could be adopted in Southern Arizona. In
Nigeria, *Gmelina arborea* - a forest tree species, and food crops like Yams, maize, and cassava could form a compatible agroforestry system on farmlands (Aghede, 1985). Akachuku (1985) has worked out a cost-benefit analysis of wood and food components in this agri-silviculture. He has shown that farmers' income increased by 2-4 fold besides making enough of fuelwood available for the population. Certain other profitable agri-silvicultural systems include *Gliricidia sepium* and rice (Gonzai & Raros, 1988), and Teak and upland rice in taungya reforestation method (Watanabe et al., 1988). In northern India *Eucalyptus* plantations have been raised to function as wind-breaks and shelter belts in fields used for rice and wheat cropping, successively during Kharif and Rabi seasons. It has been reported that effect of such shelterbelts is favourable for a good crop harvest of wheat but not for rice (Mathur et al., 1984; Vora et al., 1982; and Tomar & Shrivastava, 1984). The economics of *Eucalyptus* in agroforestry and its effects on agricultural crops in Haryana has been worked out by Ahmed (1989) using only observational and informational system of collecting field data. He recorded that an 8 year rotation of *Eucalyptus* was optimum, both in terms of wood yield and minimum loss to agricultural crops.

Establishment of agroforestry as a necessary and acceptable practice on farmlands must be evaluated in all of its aspects, such as the selection of trees and food crops, the effects of trees upon crop yield and soil fertility, most viable tree densities and management of wood productivity, and socio-economic impact of the system. Agroforestry is being viewed to be full of promises for the modern society. It is considered advantageous for ecological and
nutritional security (Swaminathan, 1987 and Singh, 1987) in future for the developing nations, as well as for sustained agricultural production (Shrivastava & Rama Mohan Rao, 1989; and Srinivasan & Caulfield, 1989).

The key issues involved in agroforestry are financial and economic. Approaches to the economic evaluation of agroforestry systems must include sound principles for appraisal has been emphasized by Ethrington & Mathews (1983), Harou (1983) and Tschinkel (1988). Stocking et al. (1989) have dealt in depth the cost benefit analysis as a method for systematically assessing the excess of benefits over costs of agroforestry enterprises for individuals, households, institutions, and from the perspective of society as a whole. Issues of particular importance are how environmental and social benefits should be dealt with, and whether investment in agroforestry should proceed. These steps rely on the provision of scientific and technical information, especially on the performance of an agroforestry system over time. However, few data are available and many complicated technical questions remain, such as the identification and quantification of temporal and spatial complimentarity between species, of the benefits of soil erosion control and soil conservation. The long term maintenance of soil fertility is a distinguishing feature of agroforestry that needs to be emphasized. To do this, estimates of future production have to be made, and because of the paucity of data prediction models have to be employed.

The subject of agroforestry has gathered attention of workers and people the world over, but research impetus has been desirably generated in Australia, Africa, India and the ASEAN countries where better land use management is the demand of time.