Indonesia is one of the biggest tropical countries in the world with a total land area of 188.2 million hectares, and about 21 percent is wetlands. Of the total land area, 100.7 million hectares are categorized appropriate to the agricultural activities, and half of it can be used for food crops. The total area of land which has been used for agriculture is 64.1 million hectares, or about 34 percent of the total land area. The land is still available for extending crop field, especially in Sumatra, Kalimantan, and Papua islands. However, most of the land is categorized as suboptimal land for food production. Suboptimal land in Indonesia can be found either on upland or wetlands. Suboptimal wetland can be categorized as non tidal swampy, peat, acid sulfate and tidal swampy lands which cover more than 33 million hectares, while suboptimal upland consists of 47.5 million hectares Ultisols and 18 million hectares Oxisols lands. Those suboptimal lands are spread across several islands with good prospects and potential for food crops, plantation crops and forest plants, but now this has not been well managed. Another problem exist today is the conversion of food production land to be used for the benefit of other economic and public infrastructure. Estimates of the rate of land conversion can be more than 100 thousand hectares per year. This condition is a real threat of the effort to achieve national food security. In addition to land conversion, degradation of land quality also cannot be ignored because it will directly affect the productivity of the land. The increasing need and decreasing availability of agricultural land is a result that cannot be avoided and cannot be terminated as a consequence of population growth and improving of society welfare. Understanding the reality of the issue of depreciation of agricultural land and soil fertility conditions, then it needs a proper research and technology development priority to optimize the process of food production in suboptimal lands in Indonesia. These can be done either through improving the adaptive crop cultivation technology and the development of crop varieties that are able to adapt and produce well in their respective characteristics suboptimal land in Indonesia. This presentation discusses the challenges and efforts to
improve crop production under poor environment in Indonesia.