A strategy of silk agroindustrial development can be done through a cluster approach. This approach may increase the competitiveness of this type of agroindustry because it will create vertical and horizontal relationships, complementarities and commonalities. The relationship may lead to the more economical agroindustrial activities.

This study was intended to develop a model of silk agroindustrial development strategy through cluster approach in order to increase its competitiveness. In this study several important factors in forming industrial cluster such as linkage, core industry, geographic concentration and institution have been explored. Core industry is needed as a prime mover for linkage industries and institutions. It may well manage, support and coordinate all of stakeholders involved in the cluster.

The model consists of (1) cluster location model, (2) core industry development model, (3) institution development model, (4) financial development model, (5) price harmonisation model. Model and data were integrated in computer based Decision Support System (DSS) called AI-Sutera.

The results of the study are as follows : (1) the cluster location is Wajo, South Sulawesi, (2) the core industry is silk weaving industry, (3) the main problems in core industry are technology obsolete, low quality of raw material, and limited capital, (4) The Government and other interconnected institutions are suggested to overcome the problems, (5) The proposed institution is Unit Layanan Pengembangan Usaha (ULPU). Central, Province and Regional Government and Facilitator play a significant role in the cluster development. Other interconnected stakeholders such as Silk Association, Research and Development Institution, Importer, University, Exporters also have to support Government and facilitator to develop the cluster, (6) Financial analysis gives the results that farmers producing cocoon, silk spinning industry, silk weaving and batik industry are feasible to be developed since all of them have NPV >0, IRRs are higher than the market interest rate and Net B/Cs > 1.

Even though all of silk agroindustry are feasible, their incomes are not equal. Farmer who produces cocoon gets the lowest income. Integration of cocoon producer, spinning, weaving and batik industries in the cluster may harmonize their incomes. By using calculation with constant batik price (Rp. 560,000/pieces), B/C 1.34, the price of cocoon, silk yarn and silk woven can be raised. Then, it will enable to promote silk agroindustry.

Keywords : competitiveness, model, cluster, core industry, institution