DECISION SUPPORT SYSTEM DESIGN FOR NATIONAL RICE LOGISTICS PLANNING

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ABSTRACT

The importance of rice in Indonesia had made several research conducted on national rice system. Several analysis showed that the logistics function had decisive role in determining the performance of national rice system. Komalasari (2007), Syahidah (2007), Puri (2007), and Rahamputro (2008) were some researchers began their effort on national rice logistics system.

The Government of Indonesia has been facing semi-structured problems in national rice logistics system, so that a need of some good analysis method reveal precise solution emerged, but it was still on timeless boundary framework. Then, models developed before in the past researches now became irrelevant to be implemented by the government. Model reveals precise solution, but it became unfeasible to be implemented in a timeless boundary problem such as in national rice logistics system.

So that, this research aim to integrate models developed before in a decision support system application based. DSS designed in a framework proposed by Turban et.al., 2007 and Whitten et.al., 2001. The design stages are decision flowchart design, requirement analysis, and output identification, design of conceptual model / architecture, prototype design, and prototype testing. The user of DSS is Ministry of Trading (Depdag). The DSS could be implemented by Depdag in a decision making process conducts in national, province, regency, or district level.

There are 6 decisions facilitated by DSS; domestic procurement, import, national stockpile, rice reallocation, market intervention, and rice distribution to farmer household. Every decision revealed from interactions among DSS architecture; data base, model base, dialog base, and user. The data base designed by entity relationship diagram (ERD) concept, reveal 19 data table with its relations. Model base consist of integrated model extracted from models

from past researchs and several models developed in this research. Dialog base designed by data flow diagram (DFD) concept.

DSS prototype designed by Ms. Visual Basics 2008 Express Edition, for its model base and dialog base. While the data base was designed by Ms. Access 2007. DSS prototype has tested and entire menu were proved as fit and bugs-free. All functional requirement set in design phase have proved to be validated, 8 requirements were good validated, while 6 others were modest one. Models used in this DSS have proved to be verified. Several analysis confronted DSS with actual system showed that DSS could improve the quality of decision making in national rice logistics system.

Keyword: decision support system, national rice logistics system.