ASU SCHOOL of SUSTAINABILITY
ARIZONA STATE UNIVERSITY

In Partial Fulfillment of the Requirements for the Degree of

Master of Science
Yoshi Budiyanto

Will defend his thesis

Water Efficiency in Agriculture: A Study of the Adoption of Water Conserving and Profitable Irrigation Technology in Arizona

Abstract

Water usage in the world is tied into meeting our necessities; with the dominant uses of power generation and food production. With the projected population growth, the need to produce higher agricultural yield to meet future food demand projection is hindered by water scarcity. Researchers in water policies have described strategies to meet the water gap for food production. Out of many strategies listed that could be implemented I am focusing intensification of agriculture through adoption of advance agricultural irrigation techniques. This research will focus on the agricultural sector and water management of several counties in Arizona (Maricopa, Pinal, and Yuma). This research includes: modeling of agricultural technology adoption using replicator dynamics, review of agricultural literature of irrigation technology, interview with water managers and farmers. Replicator dynamics model will be employed to evaluate possible conditions in which water efficient agricultural irrigation system proliferate. Using systems thinking, the component of the local farming environment is documented through socio ecological system / robustness lenses. Evaluation of systematic shocks and responses will be done through application of modeling insights and interviews data.

Friday, July 18, 2014
2:00 p.m.
WGHL, Room 102

Faculty, students, and the general public are invited.

Supervisory Committee:

Rachata Muneepeerakul, Chair
Karen Smith, Member
Joshua Abbott, Member