

**THESIS INFORMATIONS WITH NEW SCIENTIFIC  
CONTRIBUTIONS, THEORETICAL STUDY**

1. **Thesis name:** The study on watershed sustainability index development. A pilot study of Cau river basin.
  - Code: 62850101
  - Major: Natural Resources and Environment Management

2. **Name of PhD. student:** Le Thi Mai Van  
Supervisor: Assoc. Prof. Dr. Hoang Minh Tuyen

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Institute: Viet Nam Institute of Meteorology, Hydrology and Climate Change.

**3. Introduction:**

In recent decades, sustainable development has been receiving a great deal of attention around the world, and it has eventually become a global indispensable need due to its three-dimensional harmony orienting economic growth, social security, and environmental protection.

At the Mekong River Delta Conference on Sustainable Development in Can Tho (September 2017), scientists claimed the main causes adversely affecting the watershed (river basin) sustainable development are internal conflicts within the river basin, extreme deforestation in the upstream, and the impacts of climate change. The first and foremost cause, as it was stated in this dissertation, is the internal conflicts in watershed level. Meanwhile, under the pressure of population growth, the need for socio-economic development, environmental pollution, etc., it is the prospects of economic growth and social stability, which are both considered to lay a strong foundation to the mutual agreement among different relevant sectoral water-users from the perspective of interests in the river basin area, being greatly affected.

Presently, watersheds (river basins) are believed to encounter various challenges including water and food security, socio-economic development, and climate change. As a result, it is a must to conduct a study on watershed sustainability indices development as it will be crucial in order for policy makers, water resources managers, scientists, and stakeholders to be kept

informed about the status of river basin, facilitating to integrated watershed managing solutions in general and heading to sustainable development in particular.

Cau river basin plays an important in-stream role to Thai Binh river network, and it is taking a huge environmental stress. Therefore, the PhD candidate has decided to pick the river basin (Cau river basin) as the study area.

• There are three (03) specific objectives as follows:

- To determine the scientific background of method selection on sustainability index development for watershed in Vietnam

- To select proper sets of parameters to be used in sustainability index development for watershed in Vietnam

- To carry out a pilot study on sustainability index development for Cau river basin

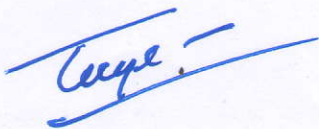
#### **List of new scientific contributions**

1. Building the scientific basis for the watershed sustainability index of Vietnam on the basis of a set of indicators and parameters reflecting four areas: Water Resources, Environment, Life and Policy.

2. Suggested method for calculating river basin sustainability and applying successful trial for Cau river basin.

**Supervisor**

**PhD. Student**



**Assoc. Prof. Dr. Hoàng Minh Tuyen    Assoc. Prof. Dr. Tran Thanh Xuan    Le Thi Mai Van**