

Review of: "The Consequences of Political and Economic Choices: Exploring Disaster Vulnerability with the Structure, Resource, and Behaviour Change model (SRAB)"

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Potential competing interests: No potential competing interests to declare.

SRAB-Review

Title: The Consequences of Political and Economic Choices: Exploring Disaster

Vulnerability with the Structure, Resource, and Behaviour Change model

(SRAB)

Summary:

Addressing the issue of disaster vulnerability, this manuscript aims to determine the political and economic causes behind arising water-related, environmental disasters seen in Vietnamese Mekong Delta (VMD) past decade.

Particularly, the manuscript seeks to critically examine Vietnam's food politics and agricultural modernisation policies in relation to changes induced into water resource management, disaster risk management and farming practices.

Examining the causes within Tan Hung commune in Soc Trang province, the study suggests that the current vulnerability to water-based disasters is amplified by the unsustainable system of triple rice cultivation, which relies heavily on large-scale irrigation infrastructure.

Investigating the events through the study using the Pressure and Release Model (PAR),

the study proposes the SRAB framework,

It indicates that currently emanating disasters are the unintended consequences of

Vietnam's agricultural reforms with a biased water management approach towards multi-seasonal, water-intensive, mono-cropping systems.

For the authors: before the review, the manuscript was converted into pdf, hence referred page numbers follow the generated pdf. Next time, please introduce line numbers or page breaks for easy referrals.

Importance:

This investigation is not only informative, but also addresses a very important issue that is bring many local agricultural

regions (such as north-western parts of India or intensive crops grown over Ogallala aquifer or the dead Aral sea, driving the regions to either scarcity or aquifer depletion and serving global supply-chains at the cost of ever cheaper regional natural provisionings in mostly, lesser developed regions of the world), that are pursuing resource-intensive mono-cropping systems, to tipping points; while trying to meet the demand of global supply chains and rising populations. Thus, this study would be appreciated by researchers and policy-makers who seek to create balance between regional environmental capacities and reckless growth imperatives of global trade policies.

Review: Following suggestions are made with the view that it enhances the quality of the manuscript. Hope it assists the authors.

The methodological review and used approach is logical; even if not comprehensive (it does not to be as this is not a review paper), and effectively brings to attention the role of structural changes in society (population, growth imperative, investments, etc, among other socio-economic parameters) that gradually determines the path towards future disasters.

However, the info on used methodology is missing in abstract- hence, a minor addition to abstract would be highly welcome.

In my opinion, in Figure 1, there should be a direct connection from structural to behavioral change, that goes into resource change, not the other way round. Reason being:

Structural changes in policies cannot directly affect local resources, if the people's behavior around resources itself do not change.

The above statement can be corroborated by the following sentence:

"reflected: (1) their vulnerability to the 2015-2016

disasters, which meant that they had annually cultivated the risky crop 3 during the

dry season and had suffered some losses as a result of the 2015-2016 disaster", in pg 12.

That is, behavior impact resource-state. Further, the risky behavior, or the vulnerability state- will definitely have a hazardous impact on designed systems' functioning when external factors changes abruptly (too much water or too less water), since systems' performance is constrained to certain well-optimized rules.

As stated, pg 7, last paragraph "Structural changes are the most fundamental root of all changes since they suggest the transformation of the whole system"

From Table 1, it is not clear whether poor /near-poor households "all" fall in the category land lesser than 1.82 hectare. Also, what is the average size of households that makes the difference in status is also not clear. That is, any conclusions about causes of state of households is not clear

From gathered data sources (Table 2 and 3), what insight is obtained is not clear.

On page 16, Under the heading, **Current Farming System and Vulnerability to Natural Risks**-information is repeated, revise the sentence.

Sentence “This drought condition sharply

deteriorated saline intrusion, with the salinity concentration level in the river in the

dry season 2015-2016 increasing by 2.4 from the previous year to 8.6 grammes per

litre and penetrating deeper into the rice fields”

deteriorated – deterioration means reduction; do you mean intensified, increased????

Table 4, indicate total production in kg or tonnes; currency values are subjected to market conditions, a physical measure is more dignified.

Structural Changes: Vietnam’s Food Politics and Rice Intensification

Policies

when you write “back to the structural changes in the Vietnamese

context in 1970s-1980s.”, stick to timeline. Keep your narrative to “agricultural policies”, try starting with “**The 1986 reform enabled Vietnam....the global trend of outsourcing**”. The other content in this paragraph is interesting, but deviates from your storyline.

Couldn’t follow- why the food shortage happened in 1980’s -excessive exports or huge increase in population in the last decade, or administrative failure of distribution/allocation???

Insight from Table 5, from a food-insecure region to major global exporter- VMD became a region that used its ecological wealth (Water) to generate its current income. Vulnerability path was mapped and continuously updated, disaster was imminent if same behavior continued. Further, the national political narrative was continuously developed around growth and intensification at the cost of nature’s limits. It is not clear what % was grown for exports (in physical units).

Further, from Table 5, can it be also inferred that political narrative from 2011 changed from local (VMD) to national one- no link between rice production and food security.???This is making the information opaque to serve export markets dependence on local resources, and ignoring evolving local vulnerabilities completely.

Summarize the insights from “Furthermore, in order to increase rice production, the state implemented decollectivisation...” this paragraph.

The Changes in Farming Behaviours-changing use of resources, leading to gradual change in state of resources

From this, summarize the insights: local resources were being valued cheaply, industrial inputs were continuously promoted, and output was cheap (second crop) (with possibly exports also increasing), leading to more intensification

toward third or more crops.

Pg 32, Paragraph “ In the 2000s and 2010s, the agricultural development of the entire province....”

can you reproduce the mentioned numbers into an additional time-series graph...it would be easier to grasp the change happening.

Pg 32, next paragraph, introduce in above suggested figure a threshold to fresh water-provisioning capacity, to indicate the danger line was being crossed with intensification of 3rd crop. Additionally, a falling purchasing power curve of farmers, could additionally highlight the predicament of farmers with increase productivity.

The discussion is quite compelling, however, apt link to relevant data, reports, and paragraphs introduced in previous sections would make it easier to connect the dots; citations are fine.

Overall, a very insightful assessment. Hope the above feedback assists. Good luck!