

# 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.

## GENERAL COMMENTS

The study critically examines Vietnam's agro-economic and agro-political policies to uncover the root causes of disaster vulnerability and/or risk triggered by drought and saline intrusion in the Vietnamese Mekong Delta (VMD) during 2015–2016 through the lens of the Structure, Resource, and Behaviour Change model (SRAB). This was accomplished by using the case study of Tan Hung commune in the province of Soc Trang as an example. The findings indicate that the forced decision to cultivate triple rice, which resulted from Vietnam's agricultural reform and was strongly influenced by the political and economic decisions of the authoritarian regime of Viet Nam, increased the farmers' susceptibility to disasters. The article is indeed an important contribution in the existing body of knowledge as it raises issues about the unsustainable agricultural practices practiced in the VMD.

In general, the manuscript is well-written with a clear emphasis. However, I find some structural and technical problems with the manuscript. Firstly, there is no line numbering in the document, which makes it challenging for reviewers to comment line by line (this is necessary). Secondly, the structure of the manuscript is not ordered properly (the results section is not explicitly indicated). Thirdly, too many repetitions of phrases, excessive use of long and complex sentences, grammatical errors, and inconsistent punctuation and in-text citation. Last but not least, the manuscript has to be shortened as it is too long. Please keep in mind the following specific remarks while revising.

## SPECIFIC COMMENTS

### Title

- 1) I think the placement of the acronym SRAB is not appropriate. It should be placed right after the phrase "Structure, Resource, and Behaviour". Also, if possible (but not necessary), try to avoid acronyms in the title.
- 2) How about using the word 'through' instead of 'with' in the title?

### Abstract

Abstract is not up to the mark. Mentioning the method (i.e., SRAB model) used in this study is necessary. Authors are suggested to include a few sentences about the future direction based on the obtained findings.

## Keywords

1) Remove behaviours, infrastructure, resources, structures, and water-related disaster. Include the following:

- Vietnamese Mekong Delta; Agricultural Modernisation; Food Politics; Drought; Saline Intrusion; Vulnerability and Risk

## Introduction

The introduction section should be backed by more disaster-related studies and then draw a research gap to justify your study.

1) "This claim implies that we should not constrain our analysis of disaster vulnerability's root causes within the present timeframe but to extend it to cover the history evolution of the affected society." Do you mean historical evolution?

2) Paragraph 2: "The event delayed the onset of and early ended the wet season while extending the dry season." Use more scientific term of 'ended'. For example, 'cessation'.

3) Paragraph 2: "Salinity intrusion also occurred earlier and further inland, covering 52.7% of the Mekong Delta and ten out of thirteen provinces and towns (FAO, 2016; Mai et al., 2018; Southern Institute of Water Resources Research, 2016)." Unclear sentence. Rephrase it.

4) Paragraph 2: The same causes have led to another devastating....State of Emergency (Tuan 2020a, 2020b; United Nations, Catholic Relief Services, and Save the Children 2020)." Why do you capitalize the word 'State of Emergency'? What kind of text citation it is?

5) Paragraph 3: "A number of studies have attributed these disasters to upstream hydropower dams, land subsidence, the relative sea-level rise, riverbed sand mining (Park et al. 2020), the current risky rice crop 3, a lack of effective long-term hydrometeorological uncertainties, a lack of information about the overall water discharge released from hydro-power reservoirs in China and Laos, and governments' weak prevention and response capacities (N.A. Nguyen 2017)."

- What does 'the current risky rice crop 3' mean? Do you mean triple crop rice cultivation? If so state it in that way. Also, it is advised that the authors must spell out the single digit numbers within a sentence.
- What do you mean by 'a lack of effective long-term hydrometeorological uncertainties'?
- 'N.A. Nguyen 2017' Inconsistent pattern of within text citation.

6) Paragraph 4: "The sections that follow first introduce... finally link back those points to the present literature." Rephrase the sentence, especially the first line.

7) Another important thing that is missing is the significance of the study and how the findings are going to contribute to existing body of knowledge.

## The Root Cause of Disaster Vulnerability

This point should be renamed as theoretical framework/concept as it mainly deals with previous theoretical concepts and

then proposes a new one. Also, this section must focus on the brief description of the previously proposed models (presently, it is too lengthy) and how the authors draw inspiration from those models to propose the new one.

1) Paragraph 1: "According to Bankoff et al. (2004, p. 3) '[v]ulnerability is not just...' Why is the first letter of the word 'vulnerability' presented in the third bracket?

2) Paragraph 1: "This argument is brilliantly captured by Oliver-Smith and colleague in their FORIN approach (2016, p. 23):..."

- It is advised to the authors that they should avoid unnecessary adjectives and adverbs like 'brilliant' and 'brilliantly' to lead the readers. Let the readers decide whether the argument is brilliant or not.
- What does FORIN stand for? In-text citations should be placed after the author's last name. Also use 'et al.' instead of 'colleague'.

3) Paragraph 1: 'Vulnerability (and resilience) is a complex social condition often deriving from the workings and interaction of multiple dynamic processes and underlying "deep-rooted causes". You started with a single quote but did not unquote it. Rectify.

4) Paragraph 1: "Instead of constraining the analysis of the disaster vulnerability within the present timeframe, it is necessary to link the current state of human-induced vulnerability to its historical evolution." Repeated line. Delete it.

5) Paragraph 1: "They assert that vulnerability research should go beyond description of surface impacts (i.e., immediate descriptive casual relations) of disaster to uncover such causes within the social structures of affected systems (Oliver-Smith et al., 2016, p. 28; Wisner et al. 2014)." Repeated line. Delete it.

### 3) Methodology

1) I think this point should be renamed to 'Materials and Methods'. Instead of 'research setting', I suggest the authors to use 'The Study Area' and should focus on why you chose this region for the present study rather than just describing the general attributes of the study area. Also, it is too long. Make it compact.

### Data and methods

Although this section appropriately describes the data and methods used, I find it a little lengthier. Make it more concise. Additionally, what kind of sampling strategy is followed to collect the data is completely missing.

### Current Farming System and Vulnerability to Natural Risks

1) Vulnerability to 'natural risk'... What do you mean by natural risk? Rephrase the point.

2) Is this the result? I'm confused. A clear heading would facilitate better understanding.

3) Note that you used many citations here in this section. The general results section deals with the obtained findings and their brief interpretations. I think it would be better if you merged the Results and Discussion sections together; otherwise,

you need to avoid citations (unless it is necessary).

4) Paragraph 2: "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 (Soc Trang SCPFSSR 2016)." Rephrase the sentence.

5) Make paragraphs 2 and 3 more precise, as you have already given a graph and table. Repeating what is in the graph and table as a straightforward statement doesn't make sense.

### **Structural Changes: Vietnam's Food Politics and Rice Intensification Policies**

1) Paragraph 1: "The French colonials brought the first mechanical dredgers to Vietnam, assisting in the establishment of the VMD (Biggs 2004; Biggs et al. 2009; Miller 2007)." What does it mean? What is the significance of this sentence?

2) Paragraph 4: "Even after Vietnam had become one of the world's largest nett rice exporters, the CPV continued to frame the VMD as a major region serving national food security (Communist Party of Vietnam 2007)." spelling error 'nett'. Grammar and spelling checks are required throughout the manuscript.

3) A clear change is observed in the role of VMD in ensuring food security since the 11th National Congress. I think this needs explanation.

4) Paragraph 5: "...Land Law 1993, Land Law 2003, and Land Law 2013..." Repetition of the word 'Land Law'. You can simply write it Land Law 1993, 2003, 2013.

5) Paragraph 5: "...Vietnam reintroduced rice high yield varieties" Do you mean 'high yield varieties of rice'?

6) Paragraph 5: I think one of the information in the following sentences is dubious. Please explain or rectify it.

- "The rate of use of HYVs increased from 17 percent in 1980 to nearly 90 percent in 2000."
- "The rate of HYV adoption increased dramatically from 9.7 percent in the VMD in 1980,..."

### **Changes in Resource Management: Large-scale Water-Control Infrastructure**

1) Paragraph 1: "...the VMD's devotion of energy..." What do you mean by 'VMD's devotion of energy'? clarify it.

2) Paragraph 1: "The state considered natural forces such as flooding and saline intrusion..." I think it would be better to call it an 'event' than a 'force'

3) Paragraph 1: "To do so, the irrigation development policy's core idea was to shut down the delta (Miller 2007)." This is an important line; however, the actual meaning is not clear at all. What do you mean by 'shut down the delta'? Do you mean shutting down the estuary to prevent saline intrusion? Please clarify.

4) Paragraph 2: "...constructing flooding control infrastructure in the upper part of the VMD including the Plain of Reeds (Dong Thap Muoi), the Long Xuyen Quadrangle and the West of the Hau River..." Unclear sentence.

5) Paragraph 2: "...which aimed to make local agriculture harmonious with the dry season with low river flows and saline intrusion,..." Unclear sentence.

6) Paragraph 3: "...37-level canals..." What are 37-level canals? Clarify.

### **The Changes in Farming Behaviours**

1) Paragraph 2: "In the 1970s, farmers in the province of Soc Trang predominantly planted a single rice harvest annually." Rephrase it.

2) Paragraph 2: "Rice crops were primarily rain-fed and largely dependent on Mekong river flows, as they were cultivated in places that were not susceptible to severe flooding and salinity (Miller 2007)." Here, the assertion and its reason seem uncorrelated. Clarification needed.

3) Paragraph 2: "...epic tragedy..." I think there are many better scientific terms than such a poetic one. Avoid using such terms.

4) Paragraph 4: The availability of ingredients to produce rice might be the reason that restricted the farmers in 'rice production cycle', but the demand side may be worth exploring here. Agricultural modernization and cost-effective materials cannot be the sole reasons to trap the farmers in the vicious cycle of rice farming as described in this paragraph. Additionally, the farmers could have simply switched to non-rice cultivation if they were not making enough profit from rice growing. In practice, they did not, as stated by the authors. What was the rationale for this? This may be an indication that the farmers were being taken advantage of, which ultimately led to their search for triple cropping.

5) Paragraph 4: "late-winter-spring crop, a spring-summer crop, or crop3 between late December or early January and mid-March." However, Table 6 depicts it up to April. Please be consistent.

6) Paragraph 4: "As early as 1997 or 1998, when some farm households began experimenting with crop 3, this shift occurred." Rephrase. I suggest to make it a simple sentence.

7) Paragraph 8: "...sense of risk..." I think perception is a better word to reflect the meaning of this sentence.

8) Paragraph 12: "In the 2000s and 2010s, the agricultural development of the entire province of Soc Trang shifted from double cropping to triple cropping." I think you mean agricultural pattern or agricultural land use pattern. If so, modify it accordingly.

9) Paragraph 13: "In the contexts of growing upstream dam...the water deficit has worsened." Unclear, complex, and hard to comprehend. Rephrase and make it simple.

10) The statement by respondents is self-explanatory, and therefore repetitions of the same would make the article just as lengthy. Unless there are some important aspects that need explanation and/or statements that need interpretation to bring out the contextual meaning, I would suggest the authors leave it as is.

## Discussion

1) Paragraph 1: "From the 1970s to the present, many farmers in Tan Hung commune in particular and elsewhere in the Vietnamese Mekong Delta (VMD) have become entangled in..." There is no need to write it in full once you have abbreviated it in the preceding section.

2) Paragraph 2: "Similar to authoritarian regimes like Taiwan's, the state appears to control the development paths of local communities in a communist state like Vietnam (Hsu et al., 2015)." In 1996, Taiwan became a multi-party democracy. I don't think Taiwan's example would make sense unless the authors provided context here.

3) Paragraph 3: "In this regard, our research adds...and shrimp farmers (demanding saltwater), as (Can 2011; Q.H. Nguyen et al. 2020)." Check grammar. There are many sentences throughout the manuscript that are unclear, complex, and hard to comprehend. I suggest using more simple sentences to make them more effective.

## Tables

1) Table 4: Follow chronological order.

2) Table 6: What does 'H' stand for? Rectify.

3) Table 6: For each crop use different colors to mark the crop calendars. Maintain the consistency in both periods.

## Figures

1) Fig. 1: Firstly, the authors need to be consistent with the word case. Secondly, this figure looks a little chaotic. For example, the arrow cuts through words like local, regional, national, and global. This needs to be fixed.

2) Fig. 2: Coarse resolution. Is the circle (which showed Tan Hung commune on the map) geo-referenced at all? The caption is very poor. Improve it.

3) Fig. 4: Increase the font size a little more for better comprehension by the readers.

4) Fig. 5: Present it in a better way. You can use some templates to make it more attractive to the readers.

5) Fig. 5: "High devotion of finance, labour. land to agricultural/rice production" What does it mean? Also, check the grammar.

6) Fig. 5: There is repetition in the points under the heading 'Changes in Farming Behaviours'

## Conclusion

I think the conclusion part is not up to par. It can be described as a general conclusion. In this type of studies, 'a way forward' or a 'policy suggestion' along with the 'general conclusion' would be more effective.

## MINOR COMMENTS

- 1) I find many instances where in-text citations are not consistent at all. This should be addressed according to the journal's standards.
- 2) Spruce up the language. I find uncountable numbers of grammatical errors (especially prepositions and punctuation). Carefully rectify them. The use of the Oxford comma is not consistent throughout the manuscript.
- 3) Although the article is well-written, I would suggest that the authors use simpler sentences rather than complex ones for better comprehension.
- 4) I'm suggesting a major proofread.