# INNOVATIVE YOUTH-LED SOLUTIONS TO LOCALISED CLIMATE-RELATED ISSUES IN THE RED RIVER CATCHMENT OF VIETNAM

**[1]THU VO, [2]HUE LE, [3]LISA JONES, [4]ANH NGUYEN, [5]FLORENCE HALSTEAD, [6]KATIE J PARSONS, [7]ALISON LLOYD WILLIAMS, [8]CHRISTOPHER HACKNEY, [9]DANIEL PARSONS**

[1,2,4]Central Institute for Natural Resources and Environmental Studies (CRES), Vietnam National University, Hanoi;
[3,5,7]Faculty of Arts, Culture and Education, University of Hull, Cottingham Road, Hull, HU6 7RX;
[6,]Energy and Environment Institute, University of Hull, Cottingham Road, Hull, HU6 7RX;
[8]School of Geography, Politics and Sociology, Newcastle University, Newcastle, NE1 7RU;
[9]Loughborough University, Epinal Way, Loughborough, LE11 3TU
E-mail: [1]vothu.mt87@gmail.com, [2]thivanhue@gmail.com, [3]l.m.jones@hull.ac.uk, [4]ntqanh@hunre.edu.vn, [5]f.e.halstead@hull.ac.uk, [6]K.Parsons@hull.ac.uk, [7]a.lloydwilliams@hull.ac.uk, [8]christopher.hackney@newcastle.ac.uk, [9]d.parsons@lboro.ac.uk.

**Abstract** - The provinces in the Red River Catchment (RRC) have witnessed increasingly severe impacts of natural disasters and climate change. The government, policy makers and local people of Vietnam are facing challenges related to disasters and climate change. Indigenous knowledge or 'traditional science' plays an important role in sustainable development, environmental protection and disaster reduction. The role of young people in mitigating the impacts of climate change is increasingly being appreciated.

Findings are presented of a research project on Youth-led adaptation for climate change challenges in Vietnam: social action, inter-generational and inter-cultural learning. This paper shows that young people working together in partnership, were supported in seeking to identify imaginative ways to mitigate climate change challenges in the Red River basin. Youth-led work explored how local, traditional and indigenous knowledges could develop understandings and strengthen local and societal resilience through an innovative partnership approach. Participatory action research approach and innovative storytelling methods were employed to enable youth-led solutions to localised climate-related issues in the region.

**Keywords** - Red River Catchment, Climate Change, Disaster Risk Reduction, Innovative Solution, Youth

## I. INTRODUCTION

### A. Climate change impacts in Red River Catchment in Vietnam

The Red River is the second largest river in Vietnam and plays an import role in the cultural and socio-economic aspects of northern Vietnam (Lu et al., 2015). It forms the famous Red River Catchment (RRC) which is among the largest river catchments in the world and spreads across China, Laos, and Vietnam with a total area of 169,020 km2.Despite covering just 5% of Vietnam's land area, the Red River Delta is responsible for 20% of the country's rice production, and approximately 30% of the Vietnamese people live there (Van Hoang and Yabe, 2012).However, rising sea-levels and increased precipitation intensity and magnitude, linked to climate change, place the RRC in Vietnam on the front-line of climate emergency (Doocy et al.,2013).

### B. Role of youth in climate change

A growing concern to climate change and its impacts is captured among youth globally. However, this trend only refers to communicating on climate change information and its impacts. In addition, the role of youth, especially a focus on how young people can actively contribute to positive change through direct action has been less forthcoming (O'Brien et al., 2018). Therefore, youth are unclear of what role they can have and how they might go about having more direct involvement in future actions to mitigate against the climate emergency (Corner et al., 2015).In Vietnam, youth through Ho Chi Minh Communist Youth Union are taking lead in some environmental campaigns such as plastic waste reduction communication program or environment cleaning day. There still exists a lack of communication campaigns on issues related to climate change.

### C. Climate change adaptation art-based storytelling in Vietnam

When communicating on climate change, the significance of creative and arts-based storytelling has been increasingly recognized (Bentz, 2020). Art-based storytelling can give power back to the most vulnerable groupsincluding women, children, indigenous communities, and developing countries to raise their voices inclimate issues.Storytelling is an age-old tradition in Vietnam and has been used to pass down cultural values and beliefs for generations. However, using art-based to reflect modern issues such as climate change is not common. Therefore, using art-based to engage youth in climate change adaptation is posing the high interests among researchers and practitioners. In order to support the communication of climate change and increasing the role of youth in dealing with risks caused by climate change, the project entitled "Youth-led adaptation for climate change challenges in Vietnam: social action, inter-generational and inter-cultural learning" was implemented in from January 2022 to December 2022 in two provinces located in the Red River Basin

of Vietnam, being Lao Cai and Nam Dinh – one in the watershed area and one in the estuary area. The research aimed to foster and facilitate young people working in partnership to identify imaginative ways to mitigate the impacts of climate change and strengthen local resilience in the RRC. Youth innovatively explored how local, traditional and indigenous knowledges can increase understandings through forms of both intergenerational and cross-cultural learning within the diverse multi-ethnic communities in Northern Vietnam.

## II. METHODOLOGY

A participatory action research approach and creative methods were used to focus on effecting positive change (Kindon et al., 2007). Data collection was flexible and responsive to different ways of knowing, including 'data' that is visual rather than verbal, emerging in group rather than individual interactions, and favouring comparison over 'measurement' (with the former potentially difficult but also undesirable), alongside a commitment to 'empower local analysts' rather than set out to 'extract information (Chambers,1994). All data collection was carried out by youths with focused support for both the people-facing data collection and in analysing/understanding the climate science knowledges that were produced. Youths were trained how to conduct research by themselves. Those were used by youths to collect data includes:

- Desk study: Youths collected climate change related reports and documents to better understand the impacts of climate change at research sites and programs or strategies that were implemented to respond to climate change. Those includedsocio-economic development plan at thecommune level; reports on impact of climate change in Xuan Thuy National Park, and images and videos on climate change provided by local authorities and local people at the research sites.
- Key informant interviews: youths conducted interviewswith local people using survey tools. Those questions covered issues such as impacts of climate change on their lives and their experiences in respondingto those impacts.
- Focus group discussion: a group of 6 to 8 people of both men and women of different ages at each research site were invited to participate in focus group discussions so that local people could voice their wants and needs before, during and after an event such as flood as well as what they would expect from the local government to help them recover from losses experienced during the event. It is important to note that youths led those discussions and discussion notes were taken for data analysis and storytelling later.
- ArcGIS survey 123: Youths were trained how to use ArcGIS 123 to answer questions online and update location and take photos while conducting the field surveys.
- Storytelling method: youths used different innovative methods to tell their stories that had collected from local people. Those methods include flip grid, podcast, video making, animation, poem, diagrams and water puppetry performance.

Research sites: In Lao Cai province, Ban Ho commune, Bao Thang districtwas selected due to its impact caused by climate change and emergency floods discharging hydropower plant. Households were affected by floods. Plants, land, crops along streams were severely damaged, infrastructures, stables, livestock were swept away by floods. Cardamom trees planted in the natural forest died due to frost. Life was turned upside down. In Nam Dinh province, Giao An and Giao Lac communes located in the buffer zone of Xuan Thuy National Park were chosen as the research sites. The reason was that these areas were highly affected by sea level rise and floods that brought negative impacts to aquaculture such as shrimp and clam farmingand mangrove forest protection of Xuan Thuy National Park.

## III. RESEARCH RESULTS

### A. Youth took role as researchers

After a series of training on research methodology, youths were more confident to design survey tools and then conduct research at their localities. At the beginning, they were afraid that no one would be interested in meeting with them. In fact, they were welcome by the local community as well as the local authorities. After the scoping visit was conducted, the research sites were selected by youths in each province. Those villages that were most affected by climate change were selected for the field surveys. Key informant interviews and focus group discussions were then conducted by the youths using the survey tools designed by themselves.

### B. Innovative art-based storytelling methods

- Using the new methods in which they used for the first time
  After being trained on using digital methods, youths tried to use those for the first time such as flip grid, Arc GIS and online story maps via Arc-GIS Survey 123. They used these methods to reflect their lessons learned as well as capture the climate change related information, pictures and stories that they collected from the research sites. Although still being supported by professional researchers, youths could use basic digital means to transfer their information and stories online.
- Integrating climate messages into the traditional folklore/ art: Local poem (ca ve) and water puppetry performance

Stories on experiences in dealing with climate change was also integrated in the traditional folklore/art. Local people in Nam Dinh province created a local poem to describe their action to mitigate impacts of climate change. Stories collected from the key informant interviews and focus group discussions were also reflected in the water puppetry show. Water puppetry researchers worked together with the youths to develop a manuscript of 6 scenes, which was later performed at the final workshop event at the Vietnam Museum of Ethnology by artists from Dong Ngu Water Puppet Troupe, Thuan Thanh District, Bac Ninh Province, who perform regularly at the museum.

The artists from the water puppetry troupewere excited to take part in a project, but also found it challenging having never created a new performance that addressed contemporary issues such as climate change. Particular challenges were the creation of puppets to represent different ethnic groups from the mountainous regions and the difficulty of conveying some of the issues, given the limitations of the puppets to express different emotional states. The head of the troupe recalled:

"Through the stories in the manuscript, we now understand more about climate change and measures taken in different areas in the RRC when dealing with climate issues. Contemporary issues/stories play a very important role in maintaining the traditional folklore art, if not the art will disappear".

- Water puppetry performance taken out into local communities

After the contemporary water puppetry performance was warmly received by the audience and the youth at the Vietnam Museum of Ethnology, many youths said that they saw water puppetry for the first time in their life and believed that water puppetry is an effective communication tool to raise public awareness about climate change. The artists were then mobilized to take the performance out into local communities in Nam Dinh and Lao Cai provinces where the youth came from. The head of the water puppetry troupe said that: "We want to bring the contemporary water puppet performance to Nam Dinh and Lao Cai provinces, where people live on the frontline of climate change with threats to livelihood futures to help them better understand about the impacts of climate change through a traditional folk theater art form originated from wet rice civilization - water puppetry." Two water puppetry shows were performed in the two provinces and were appreciated by the local officials, teachers and students, and especially the local community. After the puppet show in each province, youthsconducted the survey to capture the views of the audience. They were asked about their take-home messages, if shows like this should be continued to reflect climate change adaptation stories and performed for villagers and children in the future and if they would make any changes as a result of what they had seen in the performance. The majority of the audience expressed their desire to see more shows like this in the future so that have the motivation to join hands to fight against climate change.

## IV. CONCLUSION

The youths have proved that they are the true agents for change in the Red River Catchment. After being trained on research methodology, they were provided scientific support for analysing co-created data and build knowledges to enable youth-led solutions to localised climate-related issues. Innovative storytelling served as a new approach in reflecting indigenous knowledge associated with living with water within the Red River Catchment and climate change adaptation stories. Youths now feel more confident to communicate stories collected while they were in the field through innovative means of storytelling. Diversified types of storytelling including traditional and digital means were applied in the research. Integrating contemporary issues such as climate changeinto traditional folklore artsuch as water puppetry can serve as a new and powerful communication tool of climate change education in Vietnam.

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