

(RE)CONNECT THE NEXUS (RCTN): YOUNG BRAZILIANS' EXPERIENCES OF AND LEARNING ABOUT FOOD-WATER-ENERGY

Recent research about the food-water-energy nexus has tended to focus on flows (e.g. between producers and consumers) and ways of governing the nexus. However, there is a real need to examine how people (especially young people) understand, learn about and participate in the nexus, in their everyday lives. Only by doing so can we address crucial concerns - such as persistently high levels of poverty amongst Brazil's children, their unequal access to nexus resources, their resilience to nexus threats, and the role of education in addressing the those threats in the future. In Brazil, as in similar countries, young people are a hugely important group, demographically and socially. In Brazil, young people (aged 0-24) make up 42% of the population. Moreover, we already know that in diverse global contexts, young people are instrumental in terms of securing access to resources (including nexus resources), economic productivity, societal resilience, and community life. In addition, young people are often the main recipients of education programmes - especially Education for Sustainability (Efs) - that attempt to address nexus threats and sustainable development goals. However, there is scant research - either in Brazil or globally - that focuses on young people and their interactions with the nexus. This unique, collaborative research will address these important gaps. This project's main aim is to examine young people's (aged 10-24) understandings, experiences and participation in the nexus in Brazil. It focuses on this age group as older children/young adults are a key target group for Efs, and research shows that they are likely to have greater capacities for reflection on the nexus than younger children. In achieving this aim, the project will address three core research questions (with several sub-questions).

1: What are young people's (aged 10-24) understandings, experiences and participation in the nexus in Brazil? Focussing on the Metropolitan Region of Paraiba do Sul River Basin and Sao Paulo State North Shore (Sao Paulo State) as a case study, how do these experiences vary in terms of young people's diverse geographical (urban, suburban, rural) and socio-economic positioning (focussing on age, gender, class and ethnicity)? Amidst the complexities of the food-water-energy nexus, what are the key priorities for young people, their families and communities? How are young people included or (not) in accessing parts of the nexus?

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2: What is the role of '(re)connection' in young people's engagements with the nexus? What are the everyday choices that young people - with adult others - must make in, for instance, choosing between the food, water or energy that fuel their bodies, homes and public services? What does it mean for young people to have 'closer' or more 'distant' connections with food in a Brazilian context - and does the principle of 'reconnection', so important to Efs and other programmes for sustainable development have salience there? To what extent do young people's experiences challenge (perhaps Minority World) assumptions about what constitutes 'food', 'water' and 'energy'?

3: How does Efs in Brazil address the nexus? Given that Efs is present, but not compulsory, in Brazil's National Education Plan, to what extent does learning about the nexus currently support young people's understandings of food-water-energy? How can Efs in Brazil be developed to support greater societal resilience against nexus threats? The research questions will be addressed by producing both a baseline survey of ca. 5,000 young people and detailed, multi-method, qualitative research with 100 young people. The project will be undertaken by an established, inter-disciplinary team of UK and Brazilian social scientists and engineers, building on the work of a Newton Research Partnerships Grant. Such collaboration is vital to achieving a step-change in research and societal impacts on (young) people and the nexus.

SUMMARY OF RESULTS

The research is in an intermediate stage – a video competition was concluded; two qualitative surveys – one with young people and the other with key professionals involved with food, water and energy – were completed and are their results are under discussion in the research group for the statement of conclusions and submission of results to high-impact journals. A quantitative survey with 5,000 young people's respondents is under development and is intended to be concluded in May 2018. Therefore, we have limited findings. However, the following are highlights:

1) For young people, food is the easiest part of the food-water-energy nexus to talk about. It is most tangible to their lives. However, this varies with social class - wealthier young people take water and energy for granted, whereas less well-off young people may have less ready access. In addition, many young people talked about the relationship between food and their identities, especially in terms of 'Brazilian' foods. The project has found significant evidence that 'pushes back' against Western ideas that young people should be 're-connected' with nature and natural resources (e.g. food) through, for instance, trips to natural places. Rather, it identified a number of important ways in which notions of 'connection' to nature are conceived differently in Brazil - through care in communities/families, through dialogical forms of education, and through children's complex embodied engagements with food.

2) When thinking about different parts of the nexus, most young people thought that, in Brazil, water was most important. However, this was a function of education, with the importance of water being transmitted to children at an early age through popular songs.

3) Young people expressed strongly politicised views about food, water and energy, especially in terms of social justice for poorer groups. They argued that municipal authorities should do more to support access to these resources for the poor. They also made a range of comments about how their everyday experiences of food, water and energy are connected to the current political and economic situation in Brazil. Other key emerging themes from young people include: temporalities and daily rhythms; the multiscale experience of the food-water-energy nexus; the ways in which the food-water-energy nexus is complicated by other material objects - modes of transport, waste, technologies; the

central significance of political and financial corruption to how children view 'solutions' to nexus threats, and the key role of young people (and the internet/social media) in pushing back against corruption; the centrality of work and money (and precarity for many young people) to securing access to resources; the importance of education not only to 'connect' to questions of sustainability (as per point 1) but to 'raise consciousness' - individually, within communities, and nationally.

4) Policy-makers explained that the situation surrounding Education for Sustainability (EFS) in Brazil is complicated. Brazil has a diverse model for funding and organising education. Therefore, there is no one approach or curriculum for EFS - and any attempts (for instance by the research team) to influence EFS must therefore bear this in mind. Key themes emerging from policy-makers interviews were as follows:

1. Climate change and human-environment relations
2. Corporate socio-environmental responsibility
3. Energy
4. Environmental economics
5. Environmental education
6. Environmental governance
7. Food
8. Factors driving innovation or continuity in production and consumption
9. Land use
10. Materiality of the food-water-energy nexus
11. Media and marketing
12. Narratives of material scarcity, security and affluence
13. Nexus resources, public health and the body
14. Nexus trade-offs and synergies
15. Participant reflections on connections and disconnections
16. Perceived barriers to nexus thinking
17. Reflections on politics, policies and citizenship
18. Resource management
19. Social imaginaries of young people
20. Society, consumption and sustainability
21. Waste and wastage
22. Water