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## **Role of comprehensive climate safety nets in reducing multi-dimensional vulnerabilities for adolescents due to climate change**

*Sea level rise and the impacts of the COVID pandemic have severely impacted health, agriculture and livelihoods in Sundarbans. Based on existing safety net models, the Centre for Environmental Health, of the Public Health Foundation of India proposes a climate safety net to protect wellbeing of vulnerable populations while improving ecosystem outcomes.*

Sundarbans, the largest mangrove delta shared between India and Bangladesh, is a home to rich biodiversity and highly vulnerable to climate change. Climate sensitive livelihoods (agriculture, aquaculture, deep sea fishing) are the primary sources of income in these communities. Given repeated exposure to sea level rise, and long-term ecosystem degradation due to saltwater intrusion, loss of land, and continued erosion, livelihood and economic conditions have been drastically declined in the last decades. The situation is worst for smallholding farmers who are faced with high costs due to reduced crop yields caused by loss of land due to erosion, and reduced growth on account of soil salinity. As a result of these acute and chronic economic pressures, the farmers have adopted distress strategies such as out-migration of adolescent boys as labourers, and school drop out of adolescent girls to support the households. Early marriage (before 18 years of age) of adolescent girls are also common. The COVID pandemic exacerbated existing challenges among the smallholding farmers due to migration driven by lockdown measures. Closing of local markets hampered business and households became dependent on available food security schemes through Public Distribution System. Shutdown of schools not only affected the education of underprivileged adolescents, but also impacted their nutrition which was majorly dependent on school lunches through a mid-day meal program, and life skill empowerment.

Although school drop-out affected both adolescent boys and girls, the latter also faced the burden of early marriage. NGOs and CBOs working with adolescents reported girls as young as 14 years of age were married even during the COVID lockdown. Girls who are married early become teenage mothers, with higher risk of giving birth to low birth weight babies, who in turn are at risk of undernourishment throughout childhood and adolescence due to impoverishment. The NGOs/CBOs are providing counselling to the parents, schools and adolescent girls to stop early marriages, but lack of recorded data and resources are hampering their initiatives. NGO personnel are furthermore concerned about active sex-trafficking under the guise of early marriage.

Under these circumstances, the Centre for Environmental Health, Public Health Foundation of India (PHFI), proposes a comprehensive climate safety nets which will target adolescent boys and girls, primarily focusing on early marriage, migration, educational attainment, and nutrition security. The proposed pilot intervention of complementary safety net is based on conditional cash transfer to the small holders farming families. The cash transfer will be conditional on both boys and girls remaining in school to complete secondary level education, also delaying marriage of girls until the age of 18 years (official age of marriage in India) and delaying sending boys as migrant labourers. The program aims to establish a cohort of



adolescent girls and boys who would successfully finish the safety net program. Under such a program adolescents receive training on agro-climate monitoring, advocacy work, and facilitation and information dissemination with the community and other stakeholders. This can empower adolescents with multiple vulnerabilities to participate in processes to build climate resilience to promote human wellbeing while improving ecosystem outcomes (e.g., tree cover, deforestation, biodiversity) for comprehensive well-being of the planet.

PHFI has identified several existing national-level safety nets which could be transformed to be climate-sensitive safety nets to protect populations in climatically vulnerable regions like Sundarbans. Climate safety nets have the potential to reduce climate-driven inequalities ranging from years to generations in duration and may include gender- and child-sensitive components with flexibility to expand and contract based on household, community, and regional needs. Climate safety nets are most effective when targeting both human wellbeing and ecosystem outcomes including the wide array of interconnected climate impacts on mental health, physical health, nutrition security, and livelihoods. Strategies including the introduction of community climate workers, concerted multi-stakeholders (community leaders, farmers, CSOs, elected public representatives, local health and climate governance decision makers) engagement in co-development of climate safety nets can bridge the knowledge gaps between policy makers, implementers and the vulnerable population. The cultivation of multi-country partnerships is also key given that climate impacts are not bound by political borders.

In addition, an integrated climate safety net that focuses on vocational training in climate information and monitoring services, and environmental management could help to address reductions in nature-based livelihoods. Farmers groups and women self-help groups (SHGs) provide critical social networks which can offset livelihood loss through credit/loans and sharing of drought/saline resistant crops, with shared decision-making tailored to the needs of families and communities. Strengthening these groups and offering cash transfers or matching funds through these savings groups has the potential to improve resilience against health and livelihoods related losses.

Comprehensive safety nets have demonstrated positive results in other settings, largely depending upon overall socio-economic determinants. In Ethiopia, participation in Productive Safety Net Program reduced the negative effect of rainfall shocks on food consumption [1]. In India, participation in Odisha Rural Livelihood Program (TRIPTI), implemented through self-help groups, mitigated the negative effects of Cyclone Phalin on non-food expenditures and women's consumption but not on overall food expenditure[2]. Due to the relatively small scale of these initiatives, they were not sufficient to offset all persistent negative climate impacts, especially long lasting impacts like multiple climate-induced food system alterations or distressed seasonal migration. Scale up the safety nets in the context of existing climate and health policies and up-take by the state and national level government programs such as education and food security schemes will expand the scope of the programs and improve sustainability. Participation of community based stakeholders will increase effectiveness and accountability and can support comprehensive evaluation.

#### References:

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