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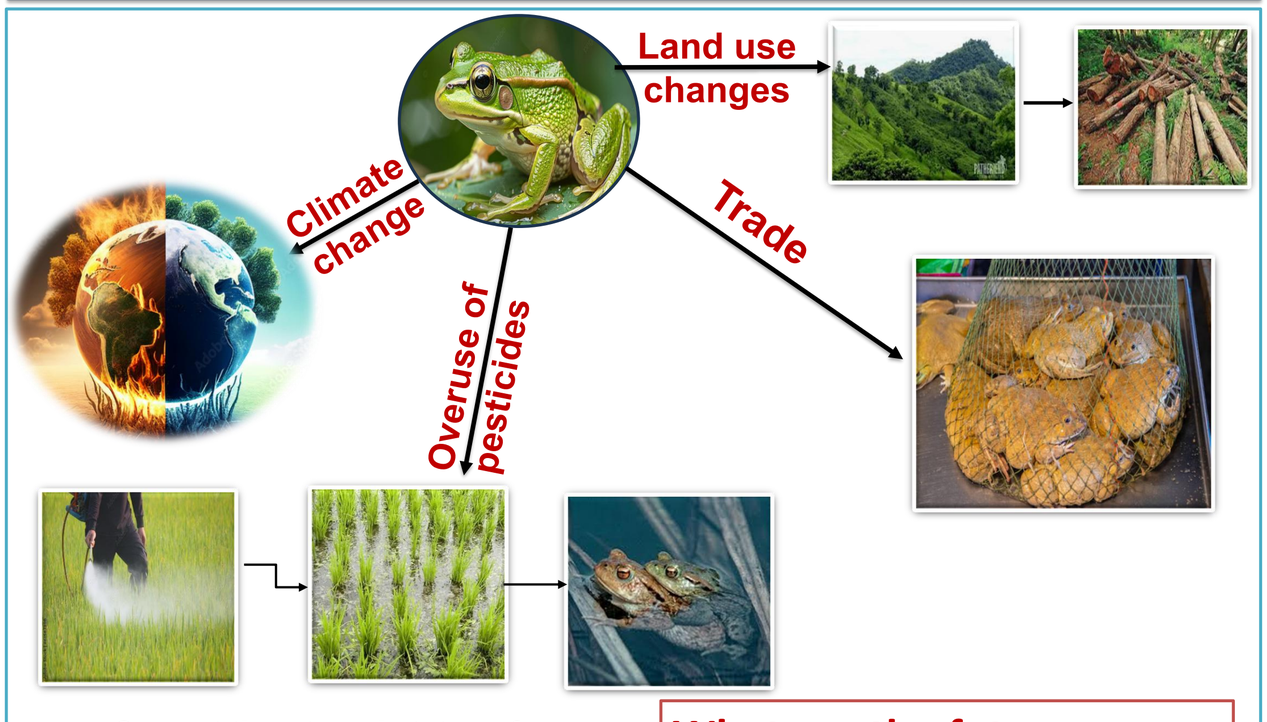
Conservation at Risk: Ignoring Climate, Land Use, Trade, and Pesticide Threats May Cause Extinction of Amphibians in Bangladesh

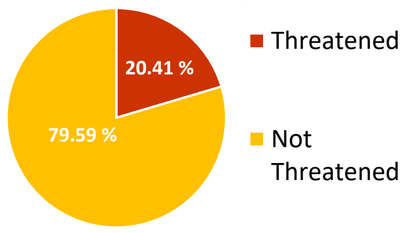
Fahmida Faiza[1,2 *], Ibrahim Khalil Al Haidar[1,2,3], Mohammed Noman[2,3], Md. Towfiq Hasan[2], Najmul Hasan[2], Mohammad Abdul Wahed Chowdhury[1,2,3]

[1] Department of Zoology, University of Chittagong, Chattogram 4331, Bangladesh
[2] Eco-climate Laboratory, Department of Zoology, University of Chittagong, Chattogram 4331, Bangladesh
[3] Venom Research Centre, Department of Medicine, Chittagong Medical College, Chattogram 4203, Bangladesh
* fhfaiza1288@gmail.com

INTRODUCTION

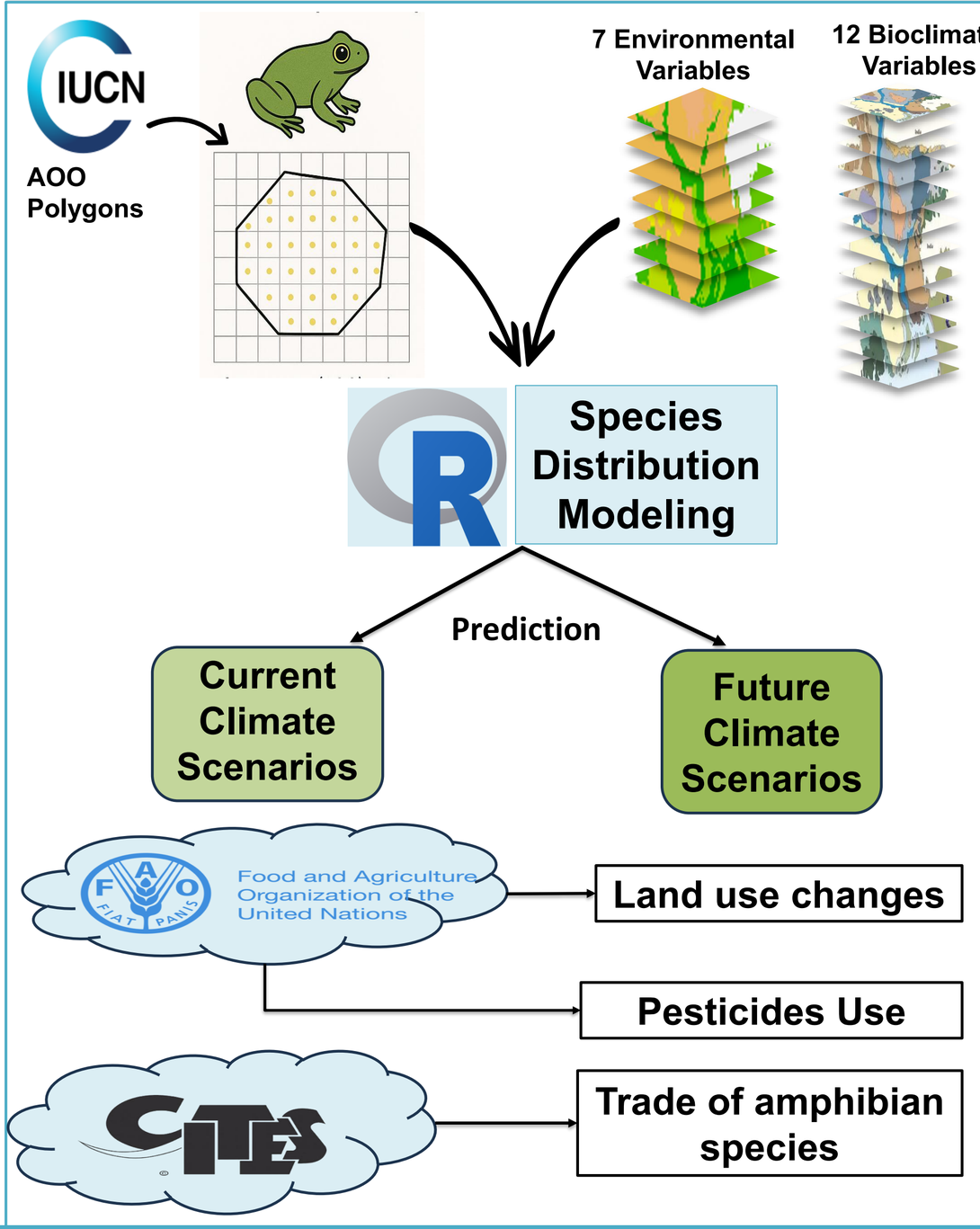


Current threatened status of amphibian in Bangladesh



What are the future consequences of environmental change for amphibian populations in Bangladesh?

MATERIALS AND METHODS



RESULTS

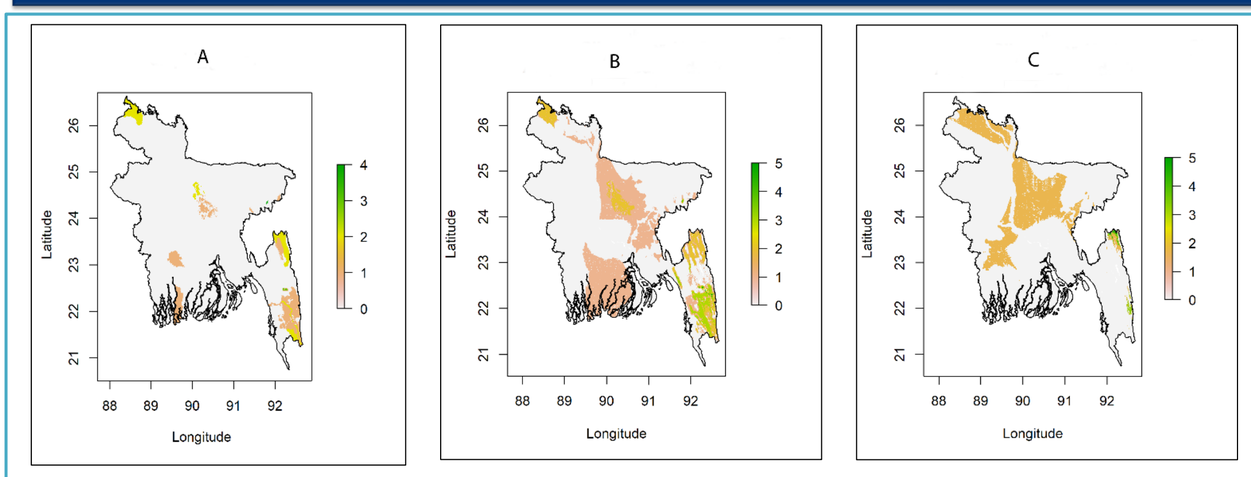


Figure 1: Species richness map of (A) observed data, (B) current suitable climate space and (C) future suitable climate space for 10 threatened amphibians.

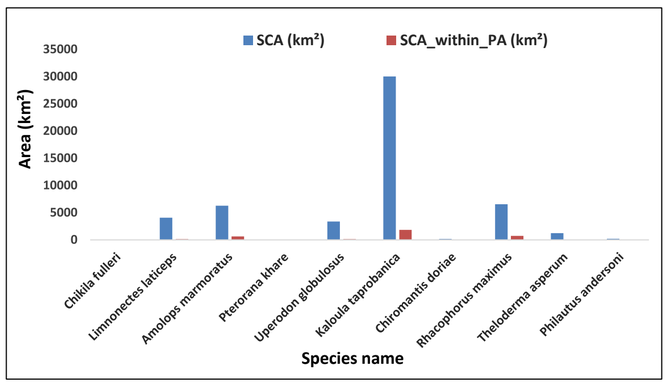


Figure 2: Estimation of suitable climate area (SCA) within protected area (PA).

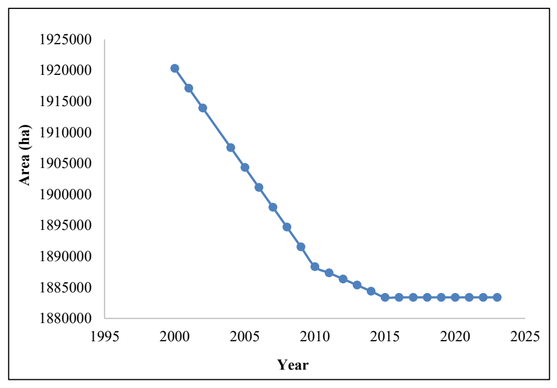


Figure 5: Analysis of land use as a forest land.

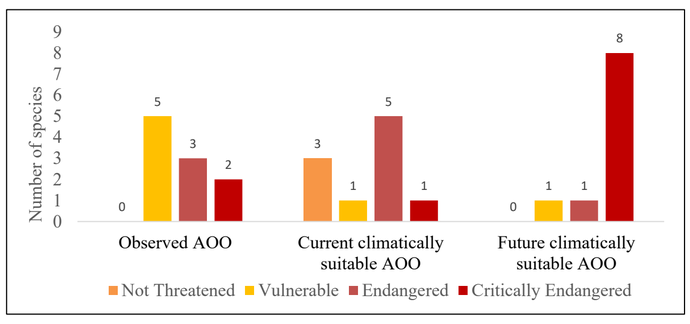


Figure 3: Analysis of species status based on the observed area of occupancy (AOO), current climatically suitable AOO and future climatically suitable AOO.

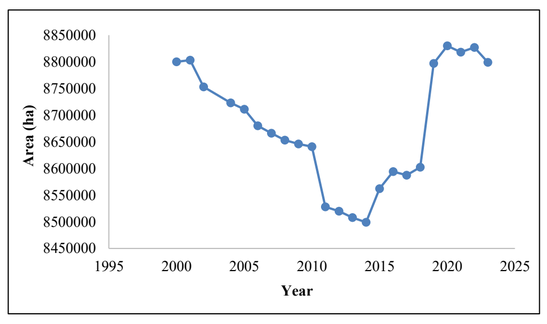


Figure 6: Analysis of land use as a crop land.

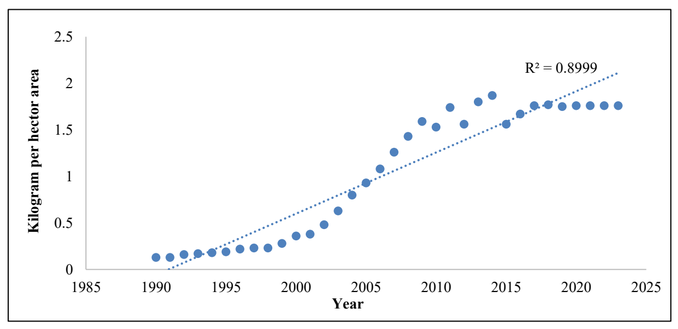


Figure 4: Pesticides use records analysis in Bangladesh.

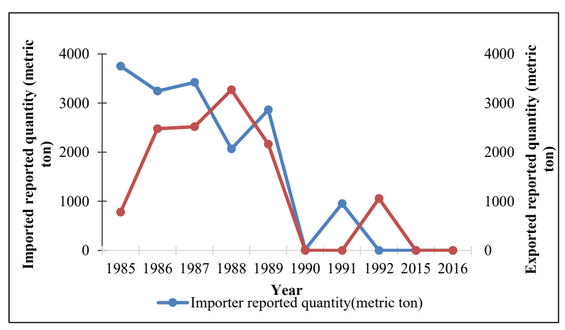


Figure 7: Amphibians export, import report of Bangladesh.

CONCLUSION

Climate change is projected to cause severe habitat loss for most amphibian species in Bangladesh, with only *Kaloula taprobanica* showing limited resilience. Future suitable habitats will likely be confined to small areas of the Chittagong Hill Tracts, underscoring their importance as conservation hotspots. Urgent expansion of protected areas, along with stricter control of pesticide use, land-use change, and amphibian trade, is essential to conserve these threatened species and strengthen ecosystem resilience.

FUTURE WORK

We will integrate finer-scale climate and land-use data, evaluate protected-area effectiveness under future scenarios, and expand species coverage to support climate-resilient amphibian conservation.