

Extreme weather events and fertility differentials and trends in Bangladesh

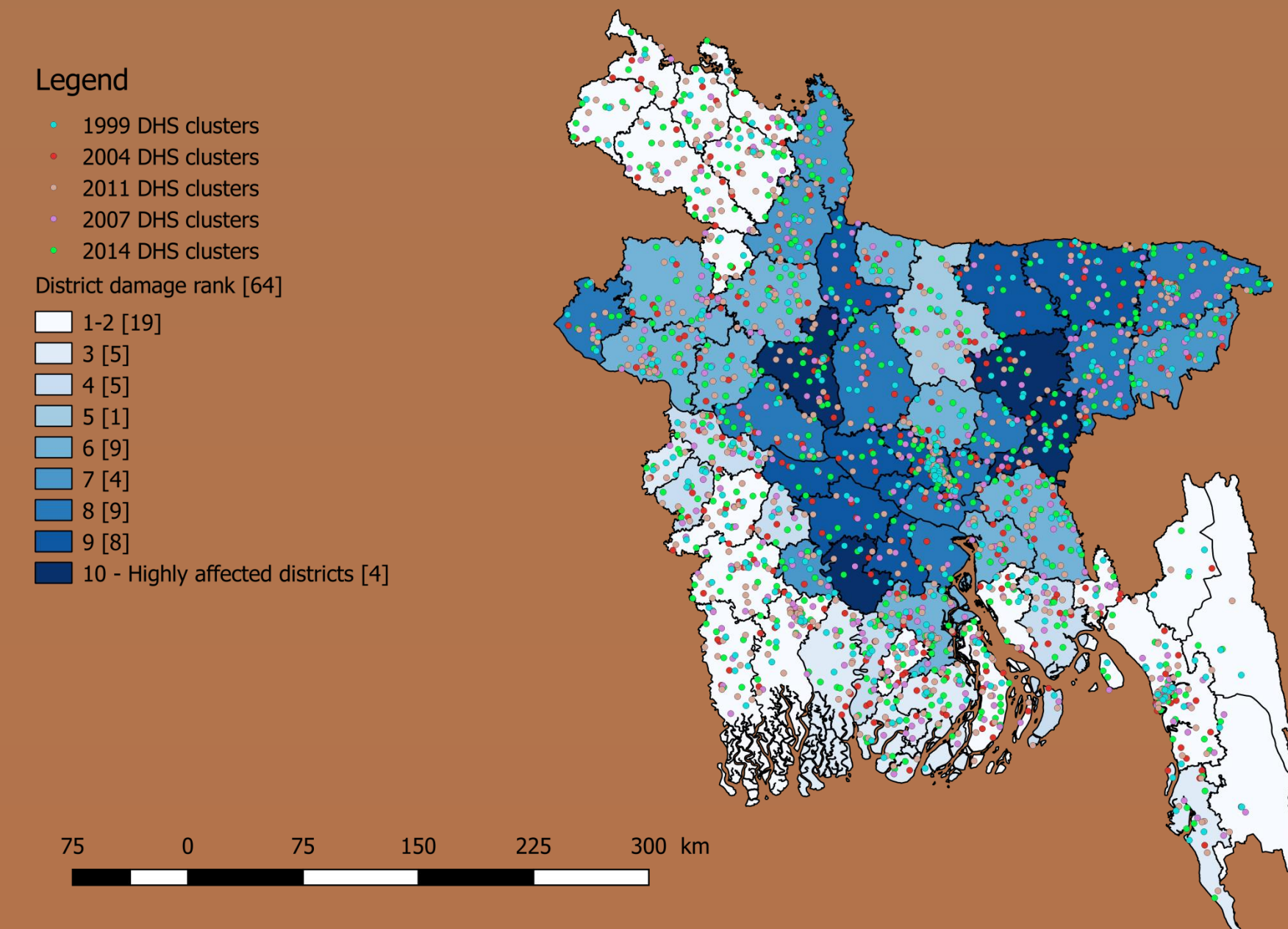
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Introduction & Objectives

- Few studies on extreme weather events and fertility, especially in developing countries.
- Bangladesh is highly vulnerable to extreme weather events and climate change.
- This study aims to compare fertility behavior in areas highly affected by floods to fertility in less affected areas, controlling for socioeconomic determinants of fertility.
- People living in flood-prone areas are expected to have higher fertility through a replacement effect and as an insurance mechanism (Cain, 1978; Nobles et al., 2015). Demand for sons may also be greater in flood-prone areas (Haq, 2013).
- Poor people are also expected to be more sensitive to extreme weather events than better off people, and their fertility is expected to be higher in flood-prone areas.

Methods & Materials

- Five Demographic and Health Surveys (1999, 2004, 2007, 2011, 2014).
- District Damage Ranks (Islam et al., 2000) are attributed to all the DHS clusters, using geographic coordinates.

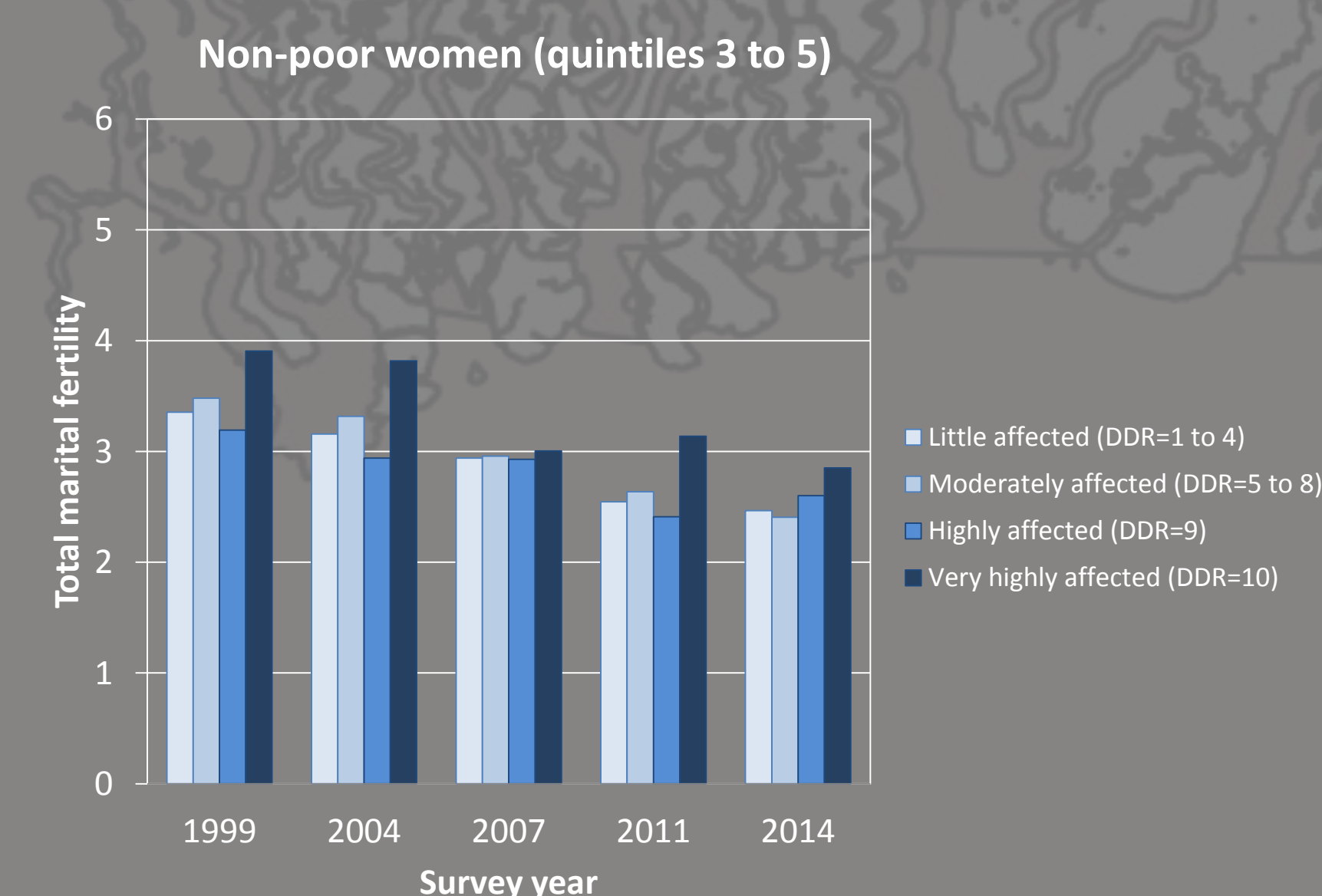
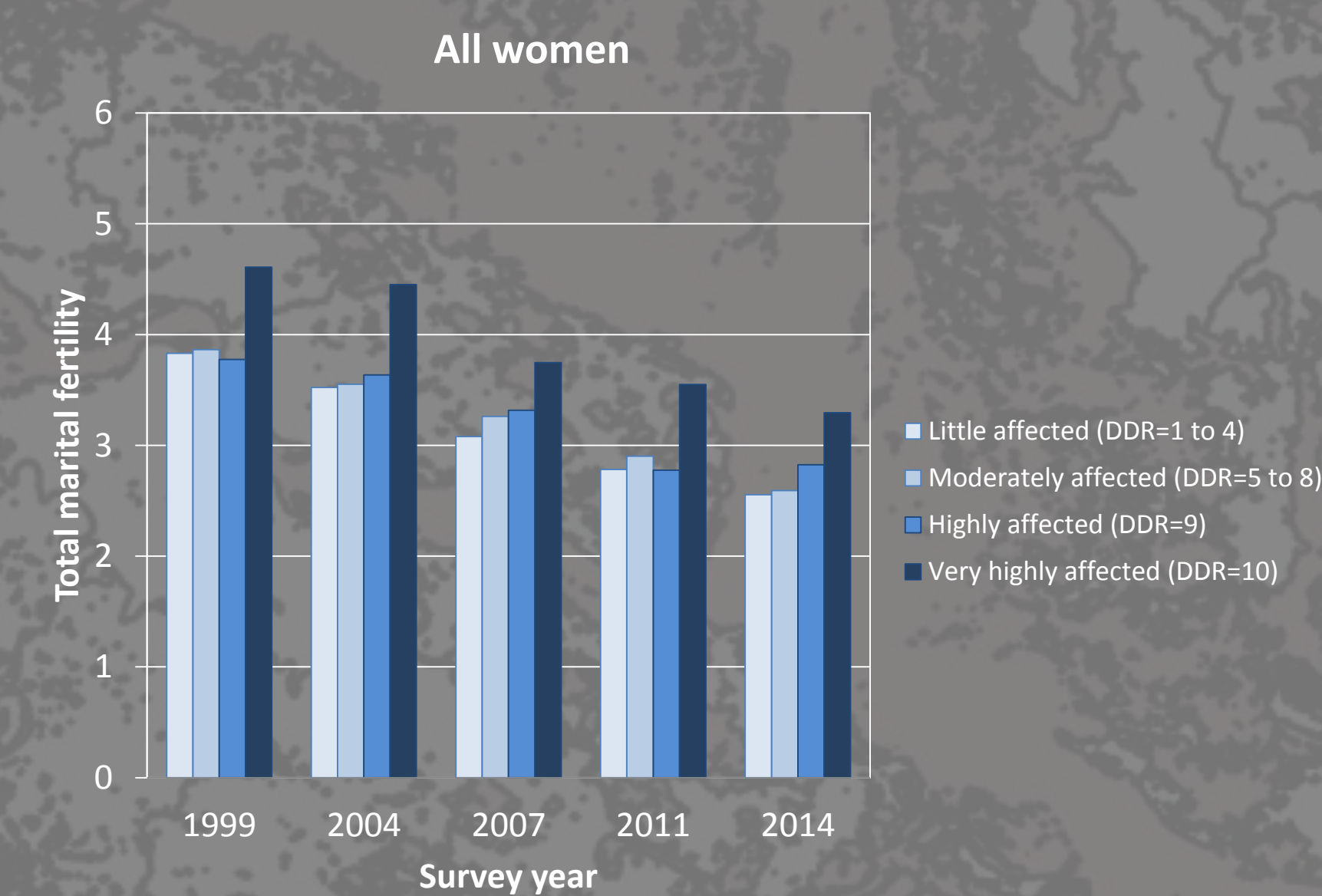


- Dependent variable: births in the last 5 years.
- Covariates: District damage rank (Islam et al., 2000) to identify flood affected areas, education, standard of living, place of residence (urban-rural), age.
- Total marital fertility rates and rate ratios are computed with Poisson regression using the `tfr2` Stata command (Schoumaker, 2013).

Results

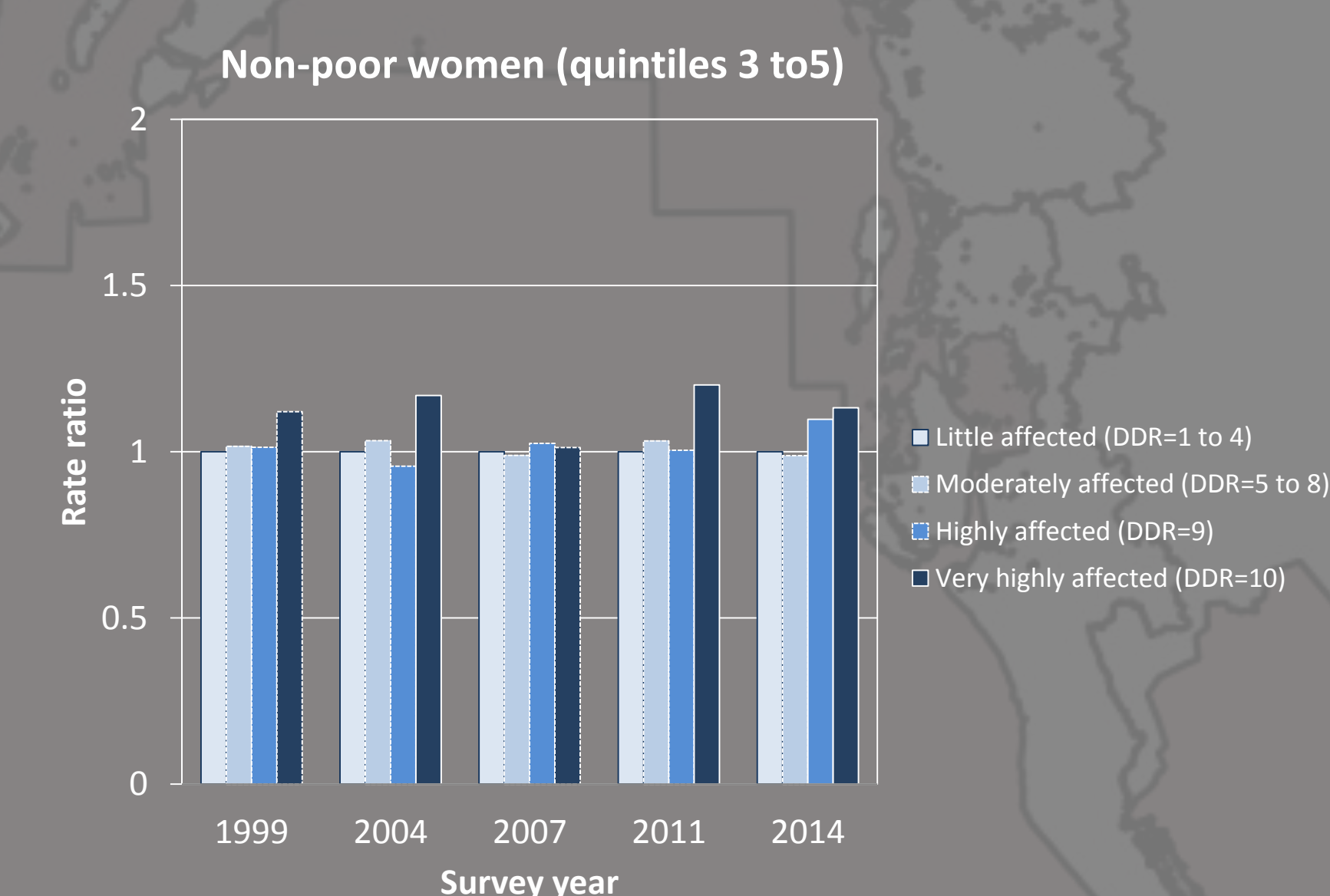
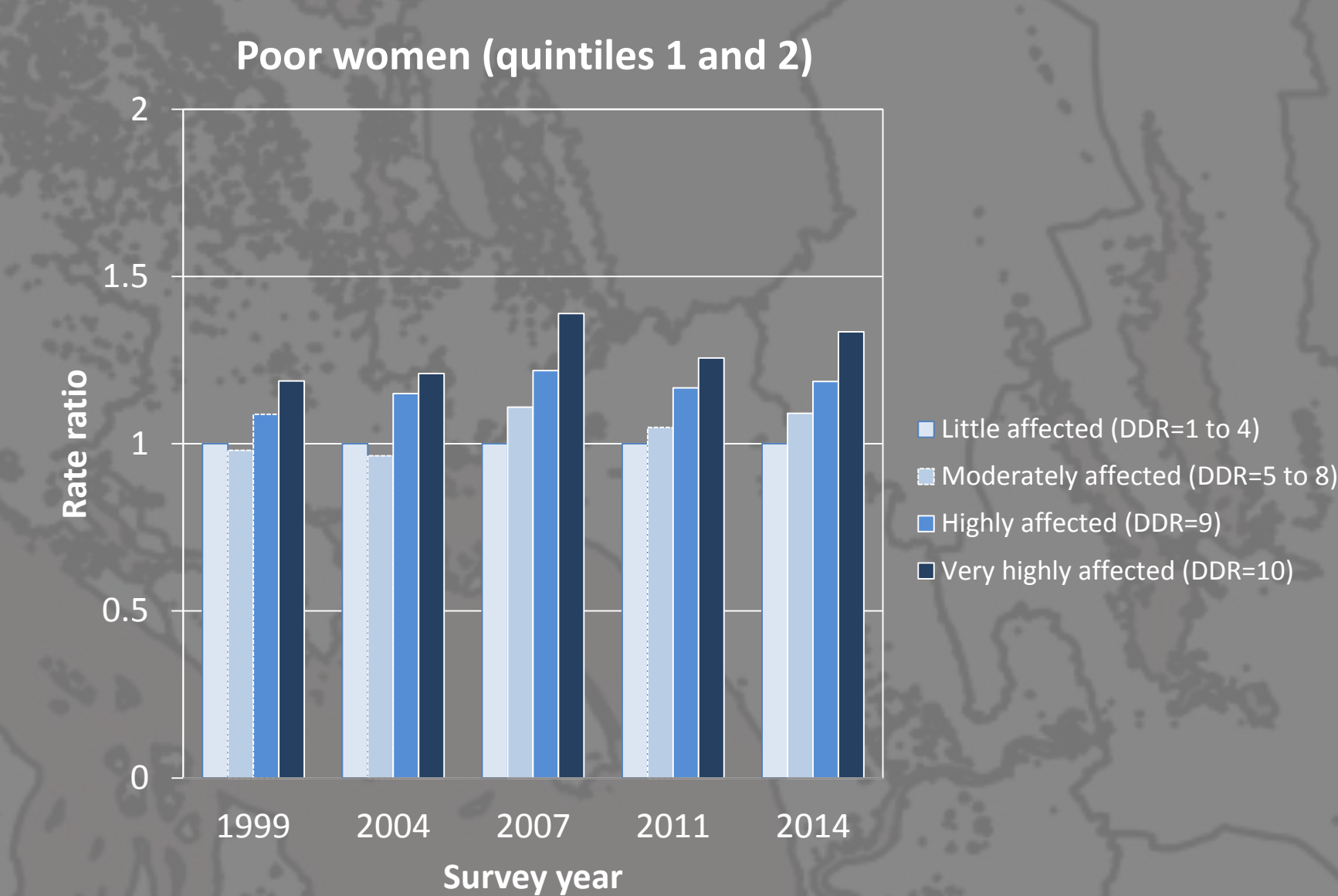
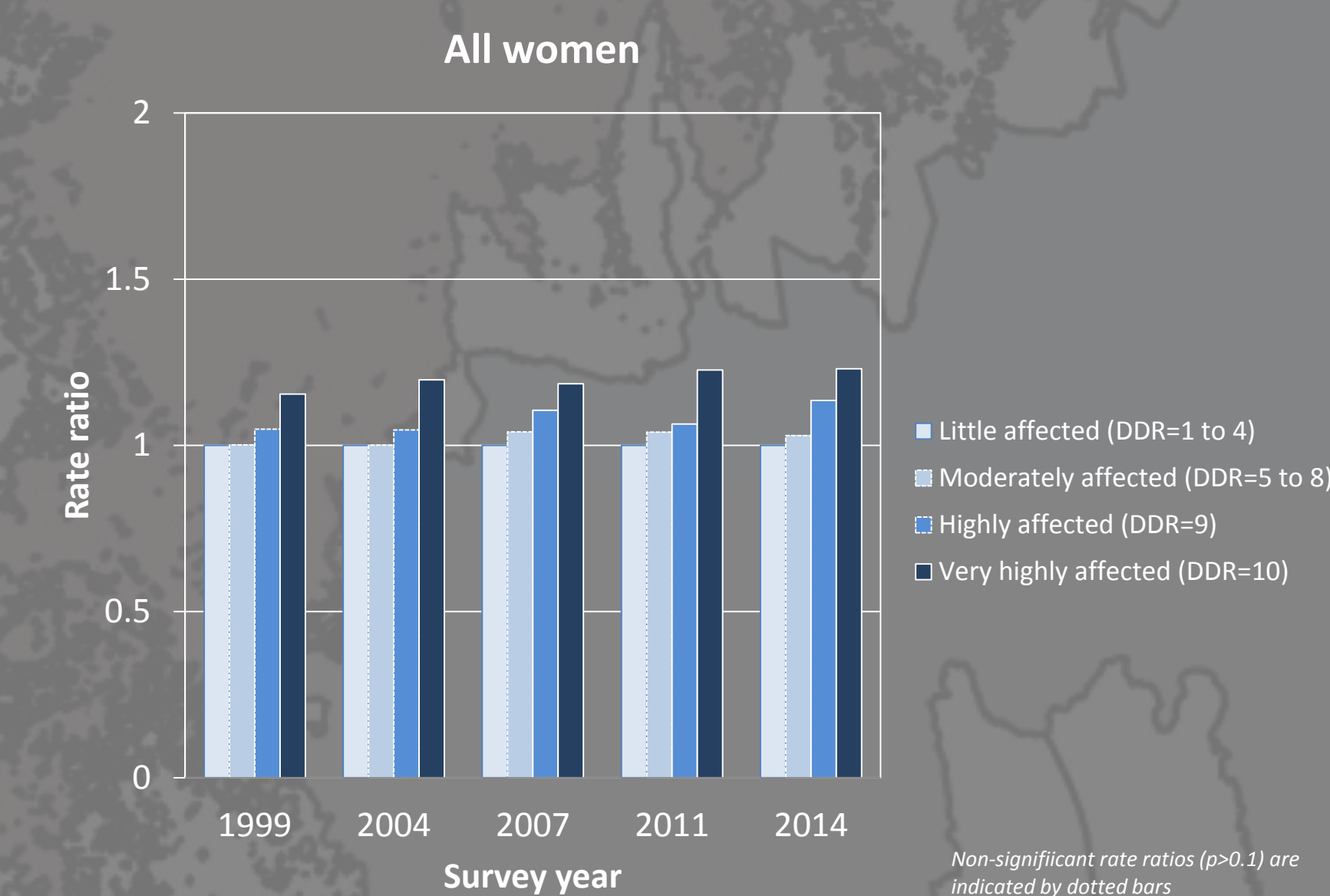
Total marital fertility rate by flood hazard

- Fertility is consistently higher in flood-prone areas, in the five surveys.
- Fertility differentials between flood-prone areas and other areas are much larger among poor women.



Rate ratios of marital fertility rate by flood hazard, controlling for education, standard of living and place of residence

- Results are confirmed after controlling for socioeconomic determinants of fertility.
- Fertility is significantly higher in flood-prone areas, especially among poor women (around 30% higher in the very highly affected districts).



Conclusions

- Fertility is consistently higher in flood-prone areas, even after controlling for socioeconomic variables.
- Differentials between flood-prone areas and other areas are much stronger among poor women.
- These results suggest that higher fertility in flood-prone areas among poor women may be a response to climatic risks.
- But ideal family size is not systematically higher in flood-prone areas and contraceptive use is not systematically lower (results not shown).

Further research

- Distinguish different types of floods, using fine-grained data on flood-prone areas by types of floods.
- Use time-varying variables on floods and/or rainfall to identify the short-term effects of floods on fertility in addition to their long-term effects.
- Further analyses on the proximate determinants of fertility and on fertility preferences to better understand the mechanisms through which floods influence fertility.
- Linking quantitative findings with qualitative research in flood-prone areas.
- Evaluate the effect of son preference on fertility in flood-prone areas.

References

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