

Results of statistical tests conducted

Table 4: Socio-demographic profiling of participants from the two communities

| Variables | Category | TA Ndamera (Upland) (n=222) | TA Nyachikadza (lowland) (n=246) | p-value |
|--|-----------------|------------------------------------|---|-----------------|
| Age | 18-29 | 20.7% | 20.3% | |
| | 30-49 | 45.9% | 41.1% | |
| | 50-69 | 27.5% | 30.5% | |
| | 70+ | 5.9% | 8.1% | |
| | | | | 0.599 |
| Gender | Male | 52.3% | 73.6% | |
| | Female | 47.7% | 26.4% | |
| | | | | 0.000*** |
| Current occupation | Farmer | 89.6% | 97.2% | |
| | Non-Farmer | 10.4% | 2.8% | |
| | | | | 0.001** |
| Marital status | Married | 82.0% | 82.5% | |
| | Single | 3.2% | 5.3% | |
| | Divorced | 1.8% | 3.3% | |
| | Widowed | 13.1% | 8.9% | |
| | | | | 0.259 |
| Highest level of education | None | 24.8% | 22.4% | |
| | Primary | 45.5% | 63.8% | |
| | Secondary | 29.7% | 13.8% | |
| | | | | 0.000*** |
| Have a member of the family chronically ill | Yes | 13.5% | 13.8% | |
| | No | 86.5% | 86.2% | |
| | | | | 0.923 |
| Household size | <=3 | 10.8% | 9.3% | |
| | 4-9 | 80.6% | 82.9% | |
| | >=10 | 8.6% | 7.7% | |
| | | | | 0.809 |
| Ownership of land in both communities | Yes | 60.8% | 14.6% | |
| | No | 39.2% | 85.4% | |
| | | | | 0.000*** |
| Membership to the Village or Area Civil Protection Committees | Yes | 34.7% | 14.2% | |
| | No | 65.3% | 85.8% | |
| | | | | 0.000*** |

| | | | | |
|--|-----|-------|-------|-----------------|
| Having an alternative place to go during times of a flood | Yes | 27.5% | 65.4% | |
| | No | 72.5% | 34.6% | |
| | | | | 0.000*** |
| Having any training or education on disasters or flooding | Yes | 28.4% | 26.0% | |
| | No | 71.6% | 74.0% | |
| | | | | 0.566 |

Table 5: Results of a two-step cluster analysis to construct the community flood resilience index

| Variable | Cluster 1- 'More resilient' score (n=296) | Cluster 2- 'Less resilient' score (n=168) | Importance |
|--|---|---|------------|
| Construction of a dyke along the Shire River (Engineering resilience) | 9.26 | 3.77 | 0.93 |
| Construction of a dyke using labour from the local communities (human capital for systems/ecological resilience) | 9.09 | 3.47 | 1.00 |
| Allowing lowland community to stay but developing early warning systems (physical capital for complex adaptive systems resilience) | 9.17 | 5.92 | 0.54 |

Cluster quality (average silhouette measure of cohesion and separation) = 0.4; Ratio of sizes = 1.76.

Table 6: Principal Components (PC) loading matrix and explained variances for five community flood resilience policy option patterns identified

| Component items | Sense of place ($\alpha=0.902$) | Sense of caring ($\alpha=0.580$) | Child education support ($r=0.652$) * | Family wellness ($r=0.220$) * | Women empowerment ($\alpha=0.457$) | System function** |
|---|-----------------------------------|------------------------------------|---|---------------------------------|--------------------------------------|-------------------|
| Provide increased social services (e.g., schools, health centres) in TA Ndamera if people are relocated there | 0.820 | | | | | |
| Facilitate TA Ndamera's access to the low land for crop cultivation in exchange for hosting TA Nyachikadza's residence in the upland (TA Ndamera) | 0.790 | | | | | |
| Facilitate increased agricultural production in TA Ndamera | 0.787 | | | | | |
| Should only proceed with resettlement after it has developed a plan that is approved by the TA Nyachikadza community | 0.769 | | | | | |
| Facilitate a complete relocation but allow communities to continue using their land for crop cultivation | 0.745 | | | | | |

| | | | | | | |
|--|---------------|---------------|---------------|---------------|---------------|---------------|
| Provide legal title to land for TA Nyachikadza community members before relocation | 0.721 | | | | | |
| Prohibit provision of any social service (hospitals, schools, etc.) in TA Nyachikadza as a way of 'forcing' people to relocate | 0.714 | | | | | |
| Facilitate the relocation of TA Nyachikadza community to the best suitable land anywhere in Malawi | 0.709 | | | | | |
| Facilitate the relocation of TA Nyachikadza community to suitable land in the highland area within the same district | 0.617 | | | | | |
| Construct a health centre in TA Nyachikadza as long as people live there | 0.590 | | | | | |
| Promote the capacity building on VCPCs to know how to respond to emergencies | | 0.741 | | | | |
| Allow households with persons who are vulnerable and sick to be prioritized during flood evacuations | | 0.740 | | | | |
| Provide adequate security in the evacuation camps to ensure women are protected | | 0.518 | | | 0.302 | |
| Adults with children of school-going age should only participate in the Public Works Program if they enroll their children in school | | | 0.889 | | | |
| Poor families with children of school-going age should only receive a cash transfer if they enroll their children in school | | | 0.879 | | | |
| Have families consider their land resources in deciding the number of children to have | | | | 0.702 | | |
| Ensure a woman should not lose family land if her husband dies | | | | 0.670 | | |
| Use of community by laws to restrict child marriages | | | | | 0.688 | |
| Provide wide access to free family planning services | | | | | 0.620 | |
| Promote village savings and loans to provide alternative income sources for women | | | | 0.400 | 0.425 | |
| Allow families to be able to stay together during flood evacuation | | | | | | 0.922 |
| % of Variance | 25.531 | 8.179 | 8.065 | 6.922 | 6.917 | 5.259 |
| Cumulative % | 25.531 | 33.709 | 41.775 | 48.697 | 55.614 | 60.874 |

* Bivariate Pearson Correlation test, **Single item component

Kaiser-Meyer-Olkin measure of sampling adequacy = 0.866; Bartlett's test of sphericity significant, p=0.000