The Interdependence of Family and Environment: A Multidisciplinary Approach

Policy Brief

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Introduction:

This policy brief presents the policy implications on the complex interplay between family stability and environmental sustainability. It analyzes both factors as both influencing and being influenced by each other.

Drawing on human ecology principles, it explores how environmental conditions impact human behavior, including marital relationships. These conditions can either strengthen or weaken bonds between spouses, ultimately affecting family stability. Conversely, stable families can contribute to environmental sustainability. Evidence suggests that married couples living together tend to consume fewer resources compared to divorced couples living separately.

This interconnectedness between family stability and environment necessitates a multidisciplinary approach to environmental policy. By acknowledging the social factors that influence resource consumption, policymakers can develop more holistic and sustainable solutions. For instance, programs promoting healthy family dynamics could not only strengthen families but also contribute to environmental goals by reducing household resource consumption.

Drawing upon established research, particularly the evidence presented in "Family Stability and Environmental Sustainability: An Interdependent Nexus" (Aref, 2022), this brief underscores the need for a multifaceted approach to environmental policy. Such an approach acknowledges the social underpinnings of resource consumption, paving the way for more holistic and sustainable solutions.

Keywords:

Family, Environmental Sustainability, Policy Implications, Marital Relations, Divorce, and Sustainable Development Goals.

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Background:

The UN's Sustainable Development Goals (SDGs) provide a valuable framework for considering the environmental dimension of family stability. Several SDGs directly address environmental concerns, including SDG 6 (Clean Water and Sanitation), SDG 11 (Sustainable Cities and Communities), and SDG 13 (Climate Action). These goals highlight the importance of managing resources and reducing environmental degradation, which can in turn influence family well-being.

In fact, the environment-related SDGs highlight the interlinkages between human behavior and the environment, which reflects a research discipline emerged back in 1950s. Decades of research have since established a body of knowledge on integrating ecology with social studies. However, methodological and conceptual challenges arose regarding how to measure the environment's influence on human behavior and vice versa (Barker, 1968).

Family theories, using a functionalist perspective, view families as social units that constantly interact with their surroundings. These surroundings encompass a wide range of factors, including economic conditions, social norms, physical environment, and even government policies (White & Klein, 2008). While the link between families and their environment is well-established, there's a lack of concrete evidence directly examining how specific aspects of the physical environment impact family stability. This knowledge gap highlights the need for further research to inform policy decisions. By understanding how factors like housing quality or access to green spaces influence families, policymakers can develop more effective interventions that strengthen families and promote environmental stability.

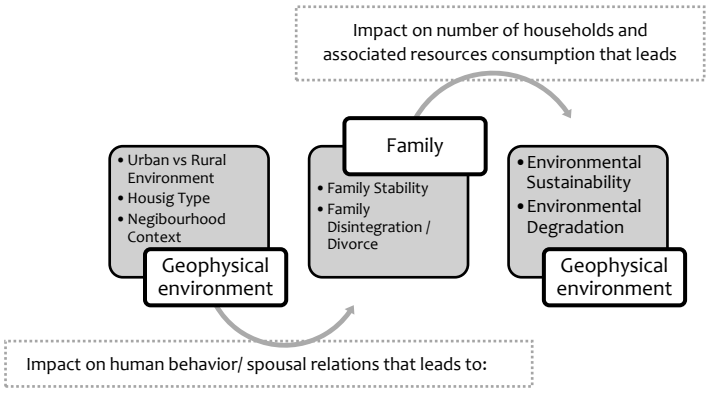
On the other hand, The positive impact of family stability extends beyond the family unit itself. Research provides clear evidence of a direct link between stable families and environmental sustainability. Strong families contribute to a healthier environment by preventing unnecessary resource use and environmental damage. Divorce, on the other hand, often leads to the creation of new households, which increases the demand for materials and land for housing. This not only expands land use but also, as studies suggest, leads to a rise in water, electricity, and energy consumption by divorced couples living separately. These findings highlight the potential for policy interventions that promote family stability to contribute not only to social well-being but also to environmental goals (Aref, 2014, 2022).

Conceptual and Policy Considerations:

Environmental research problems involve a complex interplay of social, ecological, and geographical concepts. Human ecology literature describes a reciprocal interaction between humans and their environment. Individuals shape their behavior based on the environment they inhabit. Our surroundings influence our behavior, and in turn, our actions contribute to shaping the environment we inhabit (Arnold et al., 2012; Barlow et al., 2011).

Human ecology theory even describes families as "energy systems" that interact with their surroundings, encompassing everything from physical landscapes to social norms (Bubolz & Sontag, 2009). The below graph presents the interdependency between both variables, which is examined in detail in the subsequent sections.

Graph (1) Interdependency between Family and Geophysical Environment



Source: Aref, A. (2022, April). Family Stability and Environmental Sustainability: An Interdependent Nexus. In *Sustainable Energy-Water-Environment Nexus in Deserts: Proceeding of the First International Conference on Sustainable Energy-Water-Environment Nexus in Desert Climates* (pp. 669-674). Cham: Springer International Publishing.

Hence, in practical terms, the policy-research questions guiding this brief aim to understand this complex relationship:

1. **Environmental Impact on Family stability:** How does the physical environment influence family stability and divorce rates?
2. **Divorce Impact on and Environmental Sustainability:** To what extent does family stability promote environmental sustainability? How does divorce contribute to environmental degradation?
3. **Policy Intersection:** Can policymakers consider family stability when crafting environmental policies?

By exploring these questions, this policy briefs aim to examine the possibility of incorporating family programs into environmental policy responses, ultimately fostering a more holistic approach to environmental sustainability.

Environmental Impact on Family Stability:

Economic Conditions of Neighborhood, Housing Structures and Family Stability:

The evidence on the environment's impact on family stability is multidimensional. For instance, a study examined neighborhood context as a factor affecting marital quality among African American couples. The study found that neighborhood quality significantly impacted spousal interaction and marital satisfaction. Lower quality neighborhoods with economic disadvantage were linked to lower marital quality (Cutrona et al., 2003).

Housing is another environmental factor considered. A study on "housing Type, Stress and Family Relations" surveying various housing types in Canada found that factors like limited access to outdoor space, number of households in a building, and floor level negatively impacted spousal relationships. The study concluded that living in apartments, compared to single-family homes, was associated with higher levels of marital conflict and dissatisfaction (Edwards et al., 1982). Similarly, research in post-Soviet countries found a higher prevalence of spousal violence in deprived neighborhoods (Ismayilova, 2015).

Urban/Rural Context and Marital Relations:

Several studies suggest that families in rural communities tend to be more cohesive and stable compared to those in urban areas. Tight urban housing and work-family balance challenges contribute to lower marital quality in cities. Conversely, rural settings often offer stronger social support structures and a slower pace of life, leading to less marital tension (Pimentel, 2000). Environmental anthropology argues that rural values and traditional wisdom contribute to a model of rural familism, further strengthening family ties (Coward et al., 2019).

Supporting this notion, a study examining coping strategies of urban and rural spouses in the United States found that rural respondents reported using more effective coping mechanisms, suggesting stronger family units (Marotz-Baden & Colvin, 1986).

Geography, Food Choices and Marital Satisfaction:

A new study examines the potential link between food choices and marital satisfaction. Researchers found that food insecurity can negatively impact mental health and well-being, leading to unhappiness and conflict within marriage (Heidari et al., 2023).

The study also explores the potential role of gut health. By influencing mood and behavior, the gut-brain connection could indirectly impact how couples interact and experience love in their relationship. While the study doesn't claim specific foods directly cause love or conflict, it highlights the importance of considering how food choices impact the overall well-being and potentially marital relationships.

Additionally, studies have shown that couples residing in coastal areas with access to fresh fish rich in omega-3 fatty acids, known for their mood-boosting impact and reducing anxiety, might experience greater marital relaxation (Vinot et al., 2011). Similarly, couples in rural areas with access to fresh vegetables and fruits and the potential calming effect of green surroundings could enjoy enhanced marital relations. Hence, statistics from around the globe show lower divorce rates in rural areas (Hawkins et al., 2013; Reynolds & Walther, 2020). However, a simplistic association between processed food consumption in urban environments with increased marital conflict is unwarranted. Stressful work-life balance, social isolation, and other factors likely play a more significant role in the dynamics of urban marital conflict (Gautier et al., 2009).

Divorce Impact on Environment:

Environmental Cost of Divorce

Family stability refers to the continuation of the family unit after marriage formation. Divorce disrupts this continuity and leads to family fragmentation. While research has focused on the economic costs of divorce, particularly for women, less attention has been paid to the environmental consequences.

A 2007 study by the Center for Systems Integration and Sustainability at Michigan State University examined the environmental impacts of divorce across 12 countries. Divorce often leads to the formation of separate households, which are typically smaller in size and have a higher resource consumption per person. The study concluded that if divorced households had combined to form the same average size as married households, there would have been millions fewer households with a significantly reduced environmental footprint. For example, the study found that divorced households in the US used 46% and 56% more electricity and water per person compared to married couples (Yu & Liu, 2007).

The study by Liu and Yu (2007) examined the environmental consequences of divorce by calculating the additional resource consumption associated with separate households. Their findings highlight the loss of economies of scale when couples divorce. Here are some key takeaways:

- In the US alone, divorced couples in 2005 used significantly more electricity (73 billion kWh) and water (627 billion gallons) compared to a scenario where household sizes remained consistent with married couples. This translates to a substantial amount of wasted resources due to unused space in separate dwellings.
- The study also found that between 1998 and 2002, across the US and 11 other countries, if divorced households had remained together, there could have been 7.4 million fewer households overall. This reduction would have significantly lowered resource consumption.

- The research also revealed a clear difference in space utilization. Divorced households had 33% to 95% more rooms per person compared to married couples, highlighting inefficient resource use in separate dwellings.
- Interestingly, the study found that when divorced individuals remarried, their environmental footprint shrank back to that of continuously married couples. This suggests that promoting family stability could contribute to environmental sustainability.

Marriage and Carbon Emissions

In a study that examined energy consumption patterns in China, considering factors like family structure and life stages, the research suggests that married couples with children tend to have lower per capita energy consumption compared to single-person households or childless couples. The study found out that the demographic shift to small and ageing households boosts energy consumption and carbon emissions, driven by the joint variations in time-use and consumption patterns. This finding supports the notion that larger, stable families can achieve economies of scale in energy use, potentially leading to lower carbon emissions (Yu et al., 2018).

Another study examining the impact of demographic factors on air pollution offered additional insights. The study found that larger households with married couples tend to produce less carbon dioxide per person due to more efficient resource utilization including space, energy, and transportation. Therefore, the rise in smaller households due to divorce contributes to increased air pollution (Cole & Neumayer, 2004; Pradhan et al., 2017).

Data from Eurostat, the statistical office of the European Union, supports this connection. They attribute the decline in average household size partly to an increase in single-person households, linked to higher divorce rates (Eurostat, 2017).

Conclusion Policy Recommendations:

This policy brief has explored the intricate relationship between family stability and the geophysical environment through a systematic literature review. The environment, in its physical and geographical aspects, can influence family stability by impacting spousal relationships. Conversely, family stability can contribute to environmental sustainability through reduced resource consumption associated with single-family households compared to multiple households formed through divorce.

Future research should further explore the complexities of this relationship in various contexts. Studies from developing countries and the Middle East and North Africa (MENA) region are particularly scarce. Additionally, investigations could examine the broader social and economic factors influencing both family stability and environmental sustainability.

Policy frameworks for environmental sustainability should adopt a multidisciplinary approach that incorporates social policies and intervention programs aimed at strengthening families. While social policies typically focus on the well-being of families and children, integrating environmental considerations could lead to more holistic and sustainable outcomes.

Based on the findings, the following policy recommendations are proposed:

1. **Develop and implement family support programs:** Programs promoting healthy communication skills, conflict resolution, and relationship management within families could contribute to reducing divorce rates and strengthening family stability, that would in turn contributes to environmental sustainability.
2. **Address the social determinants of family stability:** Policies aimed at tackling issues like poverty, unemployment, and access to affordable housing can create a more supportive environment for families, potentially reducing divorce rates.
3. **Integrate family stability considerations into environmental policy:** Environmental policy discussions and interventions should consider the potential social impacts on families. For example, policies promoting sustainable housing options could consider affordability and family needs.
4. **Invest in further research:** More research is needed to explore the relationship between family stability and environmental sustainability across diverse contexts. This research could inform the development of more effective policies for both social and environmental pathways.

By adopting a multisectoral approach that considers the interconnectedness of family stability and environmental sustainability, policymakers can create a more sustainable future for both families and the planet.

Note:

This policy brief explores the policy implications of a peer-reviewed paper titled [Aref, A. (2022). Family Stability and Environmental Sustainability: An Interdependent Nexus. Sustainable Energy-Water-Environment Nexus in Deserts: Proceeding of the First International Conference on Sustainable Energy-Water-Environment Nexus in Desert Climates, 669–674].

References

Aref, A. (2014). The family: A social capital for sustainable development. *OIDA International Journal of Sustainable Development*, *7*(06), 63–68.

Aref, A. (2022). Family Stability and Environmental Sustainability: An Interdependent Nexus. *Sustainable Energy-Water-Environment Nexus in Deserts: Proceeding of the First International Conference on Sustainable Energy-Water-Environment Nexus in Desert Climates*, 669–674.

Arnold, K. D., Lu, E., & Armstrong, K. J. (2012). The human ecology framework. *ASHE Higher Education Report*, *38*(5), 11–18.

Barker, R. G. (1968). *Ecological psychology: Concepts and methods for studying the environment of human behavior*.

Barlow, J., Ewers, R. M., Anderson, L., Aragao, L. E., Baker, T. R., Boyd, E., Feldpausch, T. R., Gloor, E., Hall, A., & Malhi, Y. (2011). Using learning networks to understand complex systems: A case study of biological, geophysical and social research in the Amazon. *Biological Reviews*, *86*(2), 457–474.

Bubolz, M. M., & Sontag, M. S. (2009). Human ecology theory. In *Sourcebook of family theories and methods* (pp. 419–450). Springer.

Cole, M. A., & Neumayer, E. (2004). Examining the impact of demographic factors on air pollution. *Population and Environment*, *26*(1), 5–21.

Coward, R. T., Smith, W. M., Heller, P. L., & Ploch, L. A. (2019). *The Family In Rural Society*. Routledge.

Cutrona, C. E., Russell, D. W., Abraham, W. T., Gardner, K. A., Melby, J. N., Bryant, C., & Conger, R. D. (2003). Neighborhood context and financial strain as predictors of marital interaction and marital quality in African American couples. *Personal Relationships*, *10*(3), 389–409.

Edwards, J. N., Edwards, P. K., & Booth, A. (1982). Housing type, stress, and family relations. *Social Forces*, *61*(1), 241–257.

Gautier, P. A., Svarer, M., & Teulings, C. N. (2009). Sin City? Why is the Divorce Rate Higher in Urban Areas?*. *The Scandinavian Journal of Economics*, *111*(3), 439–456. https://doi.org/10.1111/j.1467-9442.2009.01571.x

Hawkins, J. L., Mercer, J., Thirlaway, K. J., & Clayton, D. A. (2013). "Doing" Gardening and "Being" at the Allotment Site: Exploring the Benefits of Allotment Gardening for Stress Reduction and Healthy Aging. *Ecopsychology*, *5*(2), 110–125. https://doi.org/10.1089/eco.2012.0084

Heidari, M., Khodadadi Jokar, Y., Madani, S., Shahi, S., Shahi, M. S., & Goli, M. (2023). Influence of food type on human Psychological–Behavioral responses and crime reduction. *Nutrients*, *15*(17), 3715.

Ismayilova, L. (2015). Spousal violence in 5 transitional countries: A population-based multilevel analysis of individual and contextual factors. *American Journal of Public Health*, *105*(11), e12–e22.

Pimentel, E. E. (2000). Just how do I love thee?: Marital relations in urban China. *Journal of Marriage and Family*, *62*(1), 32–47.

Pradhan, P., Costa, L., Rybski, D., Lucht, W., & Kropp, J. P. (2017). A systematic study of Sustainable Development Goal (SDG) interactions. *Earth's Future*, *5*(11), 1169–1179.

Reynolds, J., & Walther, C. S. (2020). The Social Capital of Rural Demography of Marriage, Cohabitation, and Divorce. In D. N. Farris & A. J. J. Bourque (Eds.), *International Handbook on the Demography of Marriage and the Family* (Vol. 7, pp. 139–156). Springer International Publishing. https://doi.org/10.1007/978-3-030-35079-6_10

Vinot, N., Jouin, M., Lhomme-Duchadeuil, A., Guesnet, P., Alessandri, J.-M., Aujard, F., & Pifferi, F. (2011). Omega-3 fatty acids from fish oil lower anxiety, improve cognitive functions and reduce spontaneous locomotor activity in a non-human primate. *PLoS One*, *6*(6), e20491.

White, J. M., & Klein, D. M. (2008). The systems framework. *Family Theories*, 151–177.

Yu, B., Wei, Y.-M., Gomi, K., & Matsuoka, Y. (2018). Future scenarios for energy consumption and carbon emissions due to demographic transitions in Chinese households. *Nature Energy*, *3*(2), 109–118.