

# Women and Natural Catastrophe: Managing Risks and Chances for Family Endurance

Komunitas: International Journal of Indonesian Society and Culture  
11(2) (2020): 98-107  
DOI:10.15294/komunitas.v11i2.23451  
© 2020 Semarang State University, Indonesia  
p-ISSN 2086 - 5465 | e-ISSN 2460-7320  
<http://journal.unnes.ac.id/nju/index.php/komunitas>

UNNES JOURNALS

Nana Haryanti<sup>1</sup>

<sup>1</sup>Watershed Management Technology Centre, Surakarta, Central Java, Indonesia

Received: November 30<sup>th</sup> 2019; Accepted: February 5<sup>th</sup> 2020; Published: March 30<sup>th</sup> 2020

## Abstract

Increasing natural degradation has started affecting society particularly women. Conversation links between women and nature ended up with the fact that women who are mostly suffering from any natural degradations. Natural degradation will lead women to poverty as they have no choices and opportunities to move to satisfactory conditions of wealth. In very limited means and infrastructure owned, women take any responsibilities fulfilling family and society needs. In order to avoid possible family shortage, women living in the fishing village work harvesting water hyacinth, an invasive aquatic plant which has negative impact on ecosystem, and gain economic benefits from processing water hyacinth, whilst developing many other domestic strategies for family survival.

## Keywords

natural degradation; survival strategies; women

## INTRODUCTION

The increase of environmental degradation has caused many groups of people particularly those who highly depend on natural resources management for subsistence is suffering from loss of income sources. Environmental degradation is obviously breaking the capability of the poorest to work, to fulfil their daily needs, to protect family life, and more to undertake strategies for possible risks management (Shiferaw, Okello, & Reddy, 2009). Environmental degradation is believed to be the source of rural poverty problems. Environmental degradation leads to social and economic vulnerability as it is hampering rural livelihood (Gentle & Maraseni, 2012). There is a close connection between environmental damage and poverty. Environmental degradation can be a cause factor of poverty and the other way around

poverty can lead to environmental degradation (Nwagbara, Abia, Uyang, & Ejeje, 2012).

The impacts of environmental degradation will be faced by whole society. The negative impacts are neglecting gender, social and economic status, caste, race and so forth. However, the environmental degradation impact will most likely harm women. Decreasing environmental quality will force women to work overtime for family care, food production and even livelihood (New Course, 2010). Further, this most likely will lead to property losses. Gender analysis suggests that vulnerability of women is particularly caused by inequalities in term of power, position, status, and also means (Demetriades & Esplen, 2009). Without any posses-

---

### Corresponding author

Jl. A Yani-Pabelan, Surakarta, Central Java, Indonesia

### Email

[nana\\_haryanti@yahoo.com](mailto:nana_haryanti@yahoo.com)

---

sions, poor women will lose their chances to actively participate in many development activities including capacity building, education, and politics.

Environmental changes have forced many families to create strategies to adapt, adjust, develop and adapt to various alternatives for survival. Adaptation is a process of taking actions as a response to cope with external stresses and reduce risks or vulnerability (Smit & Wandel, 2006). Adaptation is human behavioural changes in order to anticipate environmental changes in various ways including technological innovation, land use change, and economic diversification to protect local resources (Batterbury & Forsyth, 2008).

Since the beginning of the reformati- on era in 1998, there have been significant changes in community life surrounding Rawapening Lake caused by ecosystem damage. Rawapening Lakes is located in Semarang district, central Java. High eutrophication status of Rawapening Lake is a result of excessive runoff and sedimentation with high nutrient contains such as phosphorus and nitrogen. The condition has been worsened by anthropogenic activities from agricultural, waste disposal, and industrial development. Economic and political crisis at that time hindered government to taking appropriate actions to control over blooming of water hyacinth (*Eichhornia crassipes*). Over blooming of water hyacinth has prevented fishermen, a fundamental job for local communities, from hope to gain income for family life. There was significant reduction on the amount of fish population available, since water hyacinth has reduced oxygen content in the water.

This paper is portraying the increasing role of women in the labour force in response to increasing environmental stresses, and exposing strategies they develop to survive from this situation. The study was taken in Semarang District, Central Java, where Rawapening Lake an important source of water for community surrounded is located. Qualitative research method employing interview, observation and focus group discussion was done for the data collections.

This method was chosen as offering wider possibility to investigate complex subject behaviours, perceptions, and flexibly capturing meaning of particular phenomenon. Data then were analysed through organizing, coding, evaluating, interpreting data and finally advancing the description.

## WOMEN WORK IN THE FEMINIST ECOLOGICAL PERSPECTIVE

In many cultures around the world, women's roles have always been associated with nature. History noted that women are often linked to nature and environmental issues. Natural symbols are mostly linked to women, "Dewi Sri" for example is a symbol of Javanese goddess of rice and fertility. Earth is seen as feminine, and represented as personification of women called Mother Earth. In anthropological studies, many communities are associating women with nature, while men are associated with culture (Mukherjee, 2013).

Discussions that link between women and nature were started with extensive exploration in the South Asia, portraying indigenous women in her efforts against commercial logging companies trying to safe trees and their forest. The narratives came to the notion that rural indigenous women are those whose role as a caretaker of nature and life of future generation (Resurrección, 2013). Intense contact with nature is gained from women daily activities include family care, food production system and work for a living. Those activities equip women with valuable experiences and knowledge about natural management sustainably (Gaard, 2015). Interpretation about women as a pristine wilderness caring has bloomed in the south, and was created by social construction that experiencing deep separation between men and women in the social life (Hawkins, 2012).

Researches proved that women have strong concern upon environmental values, beliefs, and attitudes (Xiao & McCright, 2015). Although in the cultural level analysis, this fact is caused by examination of power domination by men where hypothesis says when men are dominating social and

family life, then he will less concern over environment. In this situation, women are then taking over responsibilities to taking care of nature (Bloodhart & Swim, 2010). In the ecofeminism framework, relation between women and nature is seen as a cultural belief to keep maintaining men domination over both women and nature (Bloodhart & Swim, 2010). This framework sees gender dimension as an important variable to understand natural resource control in the society, strategies developed to maintaining ecologically sound natural resource extraction, myriad ways to sustaining viable livelihood, and to address any questions about the effects of environmental changes to women (Elmhirst, 2011). In the socio-economic aspects of life, feminist concerns upon equity and equality of access to particularly non-renewable sources. There should be fair distribution of assets to everyone, intergenerational regardless gender, class, race and so forth (Perkins, 2007).

Women nature connection is linked by domestic traditional role, but recently the role is redefined since women roles are expanded to economic aspect of household. In this new shape of gender role, employment sectors are not dominated by men solely. Women make essential contribution for rural livelihood by actively joining in the cash income generating system (Mohyuddin, Chaudhry, & Ambreen, 2012). Although women share income for household economy may not equal compare to men, but it is representing significant role for the family welfare. Involvement of rural women in the workforce is driven by many reasons including economic, social, cultural and personal factors (Srivastava & Srivastava, 2010). In many rural cases, household shock is a major causal factor for reason to change labour allocation pattern in the family that force more involvement of women in the economic activities. Agricultural sector for example, an economic subject that is very vulnerable to weather, climate, and environmental changes, where small pressure in it will likely lead to livelihood insecurity particularly for the poor (Wunder, Börner, Shively, & Wyman, 2014). In this kind of situation

women involving in economic activities are a need for family existence.

Feminist perceives that involvement of women in the cash income generation is an effort to reduce independency from husbands. They do believe that status as women worker will significantly reduce power domination toward land, labour and capital by men that has been developed in the family-based patriarchy system for centuries. However, I would argue that in many rural in the south, particularly in Indonesia, power struggle upon men-women domination is not coming as a prominent issue anymore that needs to be addressed immediately, but rather about shortage in the alternative family income opportunities which is put in the highest priority of families to be solved.

Recently, climate and environmental changes are becoming prominent issues in the gender analysis since women are perceived as the most vulnerable group of people affected by climate and environmental changes particularly in the South. Arora-Jonsson (2011) explains where women experience more susceptible during climate and environmental change, since effects of the changes are put on the shoulder of women and women should make essential attempts to overcome the environmental crisis. Inevitably, the reduction of environmental services will force women to seek other resources of cash income as women responsible for family food security. Climate variability and environmental catastrophe is obviously increasing vulnerability of women livelihood and decreasing social safety nets as women have no time to build social connectedness as an effect from working overtime for food production and family care (Goh, 2012).

In the rural setting, degraded environmental condition will lead to increasing poverty. Sarkar (2010) elucidates that rural families depend on natural resources to survive, therefore when the source of life is depleted it leads to poverty. In this situation women will suffer most because in general women have less access than their men counterpart to alternative resources which are commonly part of common pool resources. He concludes that the correlation

among environmental degradation, poverty and gender disparities is very strong. Women role in the natural resources management decision making is realized particularly when they are degraded or conflicted. Conflict upon natural resources management will be reduced when women involve as in common they serve for conservation activities. Women participation is highly reflecting sustainability regarding their attribute as guardian of nature and responsibilities to mitigate natural destructions (Mwangi, Meinzen-dick, & Sun, 2011).

Women have significant responsibility to provide food for family (Puspita, Oematam, Fuka, & PE, 2017). Their ability in many times is restrained by depletion and privatisation of common property resources where poor women depend for subsistence. Food security issue is critical in the discussion about women considering that women provide up to 80% of food particularly in the third world countries (Ivers & Cullen, 2011). Therefore noteworthy that positive link between poverty and access to productive assets is obvious. The well-being status is going to family where mother is economically independent and significantly contribute to the family income earning system (Agarwal, 1989).

However, earning opportunities are limited in the rural setting. Women roles are particularly significant but restricted in the physical tasks of agricultural, forestry, fisheries, or animal husbandries activities (ILO, 2017). Women trap merely in the unpaid family works and in the informal sectors. Indeed informal jobs offer flexible working hours enable women to shift their time to family caring, but obviously this will affect in the lower level of salary and reduce the opportunity to involve in the professional job market. Informal sector refer to ILO (2006) is defined as activities of the working poor who put long hours for low incomes and yet were not recognized, recorded, protected and regulated by public authorities. It is correlated to self-employment. Informal job is mainly done for daily consumption, in general characterized by low in skill and productivity. Reasons for involve in the infor-

mal sectors are varying among women, but principally it is done for economic purposes.

## WOMEN AND JOB CONTESTATION IN THE NEOLIBERAL AGE

Neoliberal approach taken in the development programs has transformed rural life significantly by changing rural economic patterns and social functions almost all of rural aspects since 1980s at the study area. Following global trend, rural has changed and adding many modern signs while removing many considering as old fashion patterns at the same time. As a sign of modernization, local governments have pushed industrial development replacing agricultural sectors for driving economic growth. Several important elements indeed removed and altered from rural life are job opportunities in the agricultural sectors, land used change for industrial areas, urbanization, out migration, and land fragmentation that lead to dispossession of large number of small farmers from their land.

Agriculture and fishery were the main job for inhabitants. Based on the statistical data, there were 38% people worked in agriculture in 2009, it became 37% in 2011 and the number decreased up to 14% in 2016 (BPS Kab. Semarang, 2009a, 2009b, 2016b, 2016d, 2009d, 2009c, 2011a, 2011c, 2011b, 2011d, 2016a, 2016c). However, following development of industrial areas and increasing water pollution in the lake, working in both sectors are no longer economically viable. Decreasing agricultural land and land used change in the fishing villages surrounding Rawapening lake can be shown in Table 1.

Decreasing agricultural areas were mostly caused by land used change for new settlements and new factories areas. The emergence of new factories has opened new job opportunities but this chance is exclusively available for youngers and men only and left women and elders. Fishermen have also shared the same experience, in 2011 the number of anglers and fisherman working in Rawapening reached 2.179 (BPS Kab. Semarang, 2011d, 2011a, 2011c, 2011b). They spread in four sub districts namely Ambarawa, Bawen, Banyubiru and Tuntang comprised of

**Table 1.** Land Use Change in the Study Site

Sub Districts	Fishing Villages	2009		2018	
		Agriculture Ha	Non Agriculture Ha	Agriculture Ha	Non Agriculture Ha
Ambarawa	Bejalen	455,7	15	84,3	386,75
	Tambakboyo	123,7	65,3	105,4	83,61
Bawen	Asinan	304,3	494,3	298,17	499,88
Banyubiru	Kebumen	259,1	107,1	258,2	138,05
	Rowoboni	486,7	36,1	139,88	382,96
	Tegaron	509,9	68,1	457,88	135,1
	Kebondowo	607	83	335,19	357,83
	Banyubiru	587,6	84,4	365,63	308,7
Tuntang	Rowosari	208,9	284,5	130,64	362,4
	Candirejo	156,2	329,6	139,24	346,8
	Kesongo	168	260,8	202,46	226,36
	Lopait	172,2	192,4	170,3	194,31
	Tuntang	155,7	83,2	100,94	171,08
Total		4.195	2.103,8	2.788,23	3.593,83

Resources: Statistic of Semarang Regency 2009 and 2018 (BPS Kab. Semarang, 2009a, 2009c, 2009b, 2009d, 2018a, 2018c, 2018b, 2018d)

13 vilages. However statistical data said that the number of people involve in the fishery sector has shrunk to 1.329 people in 2016 (BPS Kab. Semarang, 2016a, 2016c, 2016b, 2016d). Declining fishery workers is a sign that high degradation status of the lake has reduced ecosystem services particularly for fishing activities (Sulastri, Henny, & Handoko, 2016). This condition is a reason to move to other more profitable jobs. Whilst number of factory workers and people involve in many informal jobs such as seller, construction workers, transportation and so forth has increased more than double in 2016.

Labour force surplus in the rural areas is a complex problem. Increasing number of young rural members is creating high rate of job competition, while on the other hand agricultural sectors do not offer significant economic opportunities for them. In 2009, Statistic of Semarang Regency noted that number of productive age at 13 fishing villages were 35.110 people. The amount increased up to 41.280 in 2016. While employment in the agricultural, fishery, and animal husbandry sectors offered 19% only from total productive age available in 2016 (BPS Kab. Semarang, 2016a, 2016c, 2016b,

2016d). Those who are not absorbed in the agricultural sectors and have limited chances to work in other sectors, and in most cases are women and elderly will mostly search jobs in the informal sectors.

Traditional method of rural family livelihood that was laid on men responsibility to work has also been changed following family needs. Tight gender division of labour in the family between man and woman is no longer becoming a pattern in almost rural families recently. Increasing family needs is obviously driving more women to involve in the income generating system. Many reasons have risen, but in common women work for economic reasons. Status of family income becomes fundamental decision for women to work. Schaner and Das (2016) stated in his work that the phenomenon of women worker is also an impact of norm and social value transformation about women workers. This is particularly true in Java, and started since value and belief system about what to be suited for women has changed. This situation obviously gives more changes for women to participate in the earning activities. Open changes have been offered for women in the research site by involving

in the harvesting and weaving dried water hyacinth since no need for special skill and capitals. Since then, some fisherman families who have limited alternative of living pushed their family members in this case housewife to harvest water hyacinth in order to fulfil daily needs. Water hyacinth harvesting activities is also driven by the fact that decreasing water quality of the lake as an impact of over blooming of water hyacinth has been threaten to many fisherman and anglers, an important occupation for people leaving surrounding the lake. Other drivers for women worker phenomenon is surplus in the rural labour force and decreasing rural employment.

### WOMEN AND ADAPTATION

Increasing number of women participation in income generating activities through water hyacinth harvesting at the Rawapening Lake is a new phenomenon. This trend has happening since late 1990s, when Indonesia economic crisis occurred. At the beginning, only few women involved but since the last ten years the number has increased. The plant is harvested, dried and weaved then is sold to suppliers. There are some women working as middle traders or suppliers in the villages. The dried plant is a source of many exported handicrafts and furniture. Economic incentives come from selling dried water hyacinth were attracting many who considered as housewife to participate and take economic benefits from plant harvesting activities.

Women soak three to five hours a day in the lake for harvesting process. Some wealthier women are equipped by traditional boat enable them to move around the lake and take the best plants. In order to prevent to body contamination from dirty water and any poisons, women who soak during harvesting process are covering their body with oil, detergents and other materials since lake is a place to many waste disposals. A dangerous process, which in many cases, causes health problems for women. When the harvesting activity is finished, the plant is dried in the lakeside. In common each woman can harvest four to seven bun-

ches, where each bunch contains more and less 50 kilos. Drying process takes a week in dry sessions but can take almost a month in rainy sessions. One kilo of fresh water hyacinth will shrink up to one ounce dried water hyacinth.

Dried water hyacinth can be sold for Rp. 4000,- per kilo. The processing should be continued to get more economic value. When dried water hyacinth is braided, it can be sold for Rp. 6000,- per kilo. Usually, women work in the braiding process during free time for 3 to 5 hours a day. They spend seven to ten days to get ten kilos braided water hyacinth which is ready to be sold. Women gain more and less Rp. 240.000,- a month from processing water hyacinth, a small amount of money compare to health consequences may occur during harvesting time. Some women decide to work in the braiding process of water hyacinth as paid worker at home. They are paid for Rp. 2000,- to Rp. 2250,- per kilo braided water hyacinth. More and less eighteen kilos can be braided for a week thus they get more and less Rp. 162.000,- amount of money every month.

Women contribution to whole family income is very small. A fisherman or angler can get Rp. 60.000,- to Rp. 100.000,- per day. However, income from processing water hyacinth is very valuable for the family as in common it is used for special needs. It is used to pay any social costs comprise endowment for relatives and other society activities. In the rural life of the research site, unfinished braided of water hyacinth can be used to get some amount of loan from suppliers, and the loan is usually paid when the braiding process is finished. The loan is not always used for urgent purposes but in many occasions it is spent in many rural social activities.

Suppliers are an important role in the water hyacinth trading process. They buy braided water hyacinth and sell it to distributors who will deliver all raw materials made from water hyacinth to many craftsmen and craft industries in neighbouring cities. So far, these distributors are elements in the supply chain who have determined prices in the suppliers and producers basis.

In many cases when low demands have happened, suppliers take any responsibilities buying all braiding products from producers.

Recent time, women harvesters have faced many challenges. Obstacle is rising following farmers' pattern to cultivating paddy during dry session in the lake areas where previously flooded during wet session. Paddy fields force them to move forward from the lakeside to the middle of the lake to get good quality plants as only good plants can be braided. Moreover, harvesting activities are also delaying during rainy session considering potential risk such as tide, wind, and lightning that may happen. Beside problems come from nature, increasing number of people involve in the harvesting and braiding process is obviously increasing competition and further reducing family income. At the beginning of 2000, per kilo braided water hyacinth could be sold for Rp. 8000,- to suppliers, but recently large quantity of supply has reduced the price significantly up to 25%. Braiding workers have faced the same situation since in recent times they only get 25 kg allocation of dried water hyacinth to be braided from previous allocation up to half to one quintal. Increasing women involvement in this activity is an indication for significant reduction in the rural employment in agricultural sector.

### STRATEGIES TO SURVIVE

Rural life in the study site is portraying close connection among rural members. Traditional kinship system is very broad applied consist of not only blood relatives and marriage but expand to large amity to create reciprocity and social solidarity. Kinship system offers both many advantages whilst disadvantages at the same time. As the oldest institution, it delivers social safety net for whole members and provides sufficient aid for unpredictable risks, a concept for social capital. At the certain time, members are demanded to support kin and requested to share assets as representation of membership and claim for possible assistances in the future (Di Falco & Bulte, 2011).

Big consequence involve in the lar-

ge kin is a family member should provide enough assets and services to support other members when needed. Unfortunately, in the current situation when rural resources are limited and competed, providing goods and services for group can be a challenging situation. Experiences prove women will then be burdened with responsibilities to provide assets and services for group inclusion purpose. For this purpose recent expensive social life entails careful management of family wealth, as without any contribution to the group, a family will suffer from exclusion. It means no support from group members when unexpected situation is coming. Rural people then save less and spend more for kin activities.

In the difficult situation or when not enough assets can be provided for kin members, each family develops many ways to survive. First method in common chosen by family is lending some amount of money to private moneylenders or loan shark (Pamungkas, 2018). Private moneylenders and loan shark offer easily access even to the poor, and commonly without physical collaterals such as house or land certificate of ownership. Different from formal banking requirement system, these informal lenders do not limit money for production activities only but allows for household consumptions, party, redound, study, sick etc. The length of the loan period can be negotiated, and it may take 1, 3 or 6 months for small loan and a year for higher amount of loan. The debt is developed within high interest rate, a cause factor for poverty trap. Short term loan from informal channel can be an alternative to fulfil family or kin needs.

Home garden plays economically important in providing food and cash money. It is a source of purchasing power as home garden serves as additional income and contribute significantly in the domestic expenditure system (Fernando, Athipola, Ginigaddara, & Dissanayaka, 2016; Sedami, Naesse, Pascal, & Firmin, 2017). Yields can be periodically sold allowing family fulfilling internal and serving kin and society needs. However in some urgent cases, not ready harvested fruits may be sold to seller

with very low price and the seller harvests when the fruits are ripe. It is another mode of generating loan in rural areas. Home garden becomes a prime source for household income especially during prolong household disruption (Uzokwe UN, Giweze EA, & Ofuoku AU, 2016).

Rural provide enough labour force especially women both for regular and casual employments. Women involvement in workforce is a manifestation of household economic stress. Thus participation in the paid occupation is a way to increase economic status of the family (Srivasta & Srivasta, 2010). In agricultural sector, job vacancies are open for women during crop planting session. Women involve as paid agricultural workers in two different events, planting and harvesting. Planting activities are done half day for women, started in the morning and finished before noon and can be continued next days. Whilst harvesting activities are usually done a day full to avoid yields damage. Their men counterparts involve in most every step of planting activities, they work in the pre planting or land preparation, planting, weeding and harvesting. Women are paid less than man as they are considered low in productivity.

## CONCLUSION

The greater risks of many natural disasters will most likely afflict women. Low access to possible aids constructed by social economic status and society norms influenced by gender inequality obviously hampers some poor women. Fortunately, rich direct contact experiences to nature create resilience enables them to create room for manoeuvre particularly to convince all family needs are fulfilled. Household stresses as an impact of reduction of common pool resources drive women to take active actions in income generating activities. In many rural families, working as informal worker will be the most suitable employment since enabling women to work flexibly between domestic and paid worker. The contribution of women to family income is low, yet it is considered important as fulfilling almost secondary expendi-

tures include kin and society interests.

Narrow channel in non-agricultural world will always be stumbling block for women empowerment agendas. Furthermore, rural poor women times in the degraded areas are mostly occupied for domestic and economic activities, no times are left over for self-actualization, a root for exploitation and gender inequalities in all society aspects. The role of women will always be overlooked and will always be neglected from development programs.

## REFERENCES

- Agarwal, B. 1989. Rural Women, Poverty and Natural Resources: Sustenance, Sustainability and Struggle for Change. *Economic and Political Weekly*. 24(43): WS46-WS65. Retrieved from <http://www.jstor.org/stable/4395522><http://www.jstor.org.ezphost.dur.ac.uk/stable/pdfplus/4395522.pdf?acceptTC=true>
- Arora-Jonsson, S. 2011. Virtue and vulnerability: Discourses on women, gender and climate change. *Global Environmental Change*. 21(2): 744-751. <https://doi.org/10.1016/j.gloenvcha.2011.01.005>
- Batterbury, S., & Forsyth, T. 2008. *Fighting back : human adaptations in marginal environments*.
- Bloodhart, B., & Swim, J. K. 2010. Equality, Harmony, and the Environment: An Ecofeminist Approach to Understanding the Role of Cultural Values on the Treatment of Women and Nature. *Ecopsychology*. 2(3): 187-194. <https://doi.org/10.1089/eco.2010.0057>
- BPS Kab. Semarang. 2009a. *Kecamatan Ambarawa Dalam Angka Tahun 2009*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- BPS Kab. Semarang. 2009b. *Kecamatan Banyubiru Dalam Angka Tahun 2009*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- BPS Kab. Semarang. 2009c. *Kecamatan Bawen Dalam Angka Tahun 2009*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- BPS Kab. Semarang. 2009d. *Kecamatan Tuntang Dalam Angka 2009*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- BPS Kab. Semarang. 2011a. *Kecamatan Ambarawa Dalam Angka Tahun 2011*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- BPS Kab. Semarang. 2011b. *Kecamatan Banyubiru Dalam Angka Tahun 2011*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- BPS Kab. Semarang. 2011c. *Kecamatan Bawen Dalam Angka Tahun 2011*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- BPS Kab. Semarang. 2011d. *Kecamatan Tuntang Dalam Angka Tahun 2011*. Kabupaten Sema-



- rang: Badan Pusat Statistik Kabupaten Gunungkidul.
- BPS Kab. Semarang. 2016a. *Kecamatan Ambarawa Dalam Angka 2016*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- BPS Kab. Semarang. 2016b. *Kecamatan Banyubiru dalam Angka 2016*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- BPS Kab. Semarang. 2016c. *Kecamatan Bawen Dalam Angka 2016*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- BPS Kab. Semarang. 2016d. *Kecamatan Tuntang Dalam Angka 2016*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- BPS Kab. Semarang. 2018a. *Kecamatan Ambarawa Dalam Angka 2018*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- BPS Kab. Semarang. 2018b. *Kecamatan Banyubiru Dalam Angka 2018*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- BPS Kab. Semarang. 2018c. *Kecamatan Bawen Dalam Angka 2018*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- BPS Kab. Semarang. 2018d. *Kecamatan Tuntang Dalam Angka 2018*. Kabupaten Semarang: Badan Pusat Statistik Kabupaten Semarang.
- Demetriades, J., & Esplen, E. 2009. The Gender Dimensions of Poverty and Climate Change Adaptation. *IDS Bulletin*. 39(4): 24–31. <https://doi.org/10.1111/j.1759-5436.2008.tb00473.x>
- Di Falco, S., & Bulte, E. 2011. A Dark Side of Social capital? Kinship, Consumption, and savings. *The Journal of Development Studies*. 1–34. <https://doi.org/10.1080/00220388.2010.514328>.
- Elmhirst, R. 2011. Introducing new feminist political ecologies. *Geoforum*. 42(2): 129–132. <https://doi.org/10.1016/j.geoforum.2011.01.006>
- Fernando, A. P., Athipola, M. I., Ginigaddara, G. A., & Dissanayaka, S. 2016. *Kandyan Home Gardens and Rural Economy : Case of Athipola Village in Matale District*. (January).
- Gaard, G. 2015. Ecofeminism and climate change. *Women's Studies International Forum*. 49: 20–33. <https://doi.org/10.1016/j.wsif.2015.02.004>
- Gentle, P., & Maraseni, T. N. 2012. Climate change, poverty and livelihoods: Adaptation practices by rural mountain communities in Nepal. *Environmental Science and Policy*. 21: 24–34. <https://doi.org/10.1016/j.envsci.2012.03.007>
- Goh, A. H. X. 2012. A Literature review of the gender-differentiated impacts of climate change on women's and men's assets and well-being in developing countries. *CAPRI Working Paper*. 106(September).
- Hawkins, R. 2012. Shopping to Save Lives: Gender and Environment Theories Meet Ethical Consumption. *Geoforum*. 43(4): 750–759. <https://doi.org/10.1016/j.geoforum.2011.12.009>
- ILO. 2006. *Decent Work for Women and Men in the Informal Economy : Profile and Good Practices in Cambodia Decent Work for Women and Men in the Informal Economy : Profile and Good Practices in Cambodia*. International Labour Office. Bangkok and Phnom Penh.
- ILO. 2017. *Empowering Women in the Rural Economy*. Retrieved from [http://www.ilo.org/global/topics/economic-and-social-development/rural-development/WCMS\\_601071/lang-en/index.htm](http://www.ilo.org/global/topics/economic-and-social-development/rural-development/WCMS_601071/lang-en/index.htm)
- Ivers, L. C., & Cullen, K. A. (2011). Food Insecurity: special consideration for women. *The American Journal of Clinical Nutrition*. 94(6): 1740S–1744S. <https://doi.org/10.3945/ajcn.111.012617.1>
- Mohyuddin, A., Chaudhry, H., & Ambreen, M. 2012. Contribution of women in economic activities in Rural Balochistan: World system analysis at micro level in anthropological perspective. *Academic Research International*. 3(2): 548–556.
- Mukherjee, R. 2013. *Eco-feminism : Role of Women in Environmental Governance and Management*. 1(2): 1–7.
- Mwangi, E., Meinzen-dick, R., & Sun, Y. 2011. *Gender and Sustainable Forest Management in East Africa and Latin America*. 16(1).
- New Course. (2010). *Women, Natural Resource Management, and Poverty*. 1–32. Retrieved from <http://siteresources.worldbank.org/INTWDR2012/Resources/7778105-1299699968583/7786210-1315936222006/Complete-Report.pdf>
- Nwagbara, E. N., Abia, R. P., Uyang, F. A., & Ejeje, J. A. 2012. Poverty, Environmental Degradation and Sustainable Development: Discourse. *Global Journal Of Human Social Science*. 12(11).
- Pamungkas, D. 2018. Social Networks Among Small-Scale Fishermen in Cilincing As a Strategy to Dealing With Uncertainty in Finding Fish Resources. *Komunitas: International Journal of Indonesian Society and Culture*. 10(1): 34–43. <https://doi.org/10.15294/komunitas.v10i1.12643>
- Perkins, P. E. 2007. Feminist ecological economics and sustainability. *Journal of Bioeconomics*. 9(3): 227–244. <https://doi.org/10.1007/s10818-007-9028-z>
- Puspita, D., Oematam, M. M., Fuka, D. E., & PE, S. (2017). The Role of Timorese Women in Food Management. *Komunitas: International Journal of Indonesian Society and Culture*. 9(2): 184–190. <https://doi.org/10.15294/komunitas.v9i2.10023>
- Resurrección, B. P. 2013. Persistent women and environment linkages in climate change and sustainable development agendas. *Women's Studies International Forum*. 40: 33–43. <https://doi.org/10.1016/j.wsif.2013.03.011>
- Sarkar, S. 2010. *Gender, environment and poverty linkages*. 2(April): 145–156.
- Schaner, S., & Das, S. 2016. Female Labor Force Participation in Asia : Indonesia Country Study. *ADB Economics Working Paper Series*. 474.
- Sedami, A. B., Naesse, A. V., Pascal, G., & Firmin, A. D. 2017. Importance of Home Gardens in Rural Zone of the Municipality of Abomey-Calavi in South of Republic of Benin. *Sustainable*

- Agriculture Research*. 6(4): 150. <https://doi.org/10.5539/sar.v6n4p150>
- Shiferaw, B. A., Okello, J., & Reddy, R. V. 2009. Adoption and adaptation of natural resource management innovations in smallholder agriculture: Reflections on key lessons and best practices. *Environment, Development and Sustainability*. 11(3): 601-619. <https://doi.org/10.1007/s10668-007-9132-1>
- Smit, B., & Wandel, J. 2006. Adaptation, adaptive capacity and vulnerability. *Global Environmental Change*. 16(3): 282-292. <https://doi.org/10.1016/j.gloenvcha.2006.03.008>
- Srivasta, N., & Srivasta, R. 2010. Women, Work, and Employment Outcomes in Rural India. *Economic and Political Weekly*. 45(28), 49-60.
- Srivastava, N., & Srivastava, R. 2010. Women, Work, and Employment Outcomes in Rural India. *Economic and Political Weekly*, xlv. 28: 49-63.
- Sulastri, Henny, C., & Handoko, U. 2016. Environmental Condition and Trophic Status of Lake Rawa Pening in Central Java. *Oseanologi Dan Limnologi Di Indonesia*. 1(3): 23. <https://doi.org/10.14203/oldi.2016.vii3.20>
- Uzokwe UN, Giweze EA, & Ofuoku AU. 2016. Contribution of Home Gardening To Family Food Security in Delta North Agricultural Zone, Delta State, Nigeria. *International Journal of Agricultural Extension and Rural Development Studies*. 3(2): 26-33. Retrieved from [www.ea-journals.org](http://www.ea-journals.org)
- Wunder, S., Börner, J., Shively, G., & Wyman, M. 2014. Safety Nets, Gap Filling and Forests: A Global-Comparative Perspective. *World Development*. 64(S1): S29-S42. <https://doi.org/10.1016/j.worlddev.2014.03.005>
- Xiao, C., & McCright, A. M. 2015. Gender Differences in Environmental Concern: Revisiting the Institutional Trust Hypothesis in the USA. *Environment and Behavior*. 47(1): 17-37. <https://doi.org/10.1177/0013916513491571>