



WWJMRD 2023; 9(02): 34-40
www.wwjmr.com
International Journal
Peer Reviewed Journal
Refereed Journal
Indexed Journal
Impact Factor SJIF 2017:
5.182 2018: 5.51, (ISI) 2020-
2021: 1.361
E-ISSN: 2454-6615

Purwowibowo

Social Welfare Department,
Faculty of Social and Political
Science, University of Jember,
East Java, Indonesia.

Hanafi

Faculty of Teacher Training
and Education,
Muhammadiyah University of
Jember, East Java, Indonesia.

Community Empowerment Strategy: Raising Cattles and Goats Around Coffee Plantation Areas in Besuki Region

Purwowibowo, Hanafi

Abstract

The community around the coffee plantation are still deplorable, most of them live under striking poverty conditions. This paper describes a strategy of community empowerment around the coffee plantation areas. Interestingly, with their living conditions, they can maintain and sustain the life, even in abject poverty. Improving the value of lives of people in this class, survival strategies, i.e. empowerment through 'life-stock insurance model' are to be learned. Empowerment by the model is so that they can solve the problem of their poverty. In explaining the model, this research is conducted by the qualitative method, using primary and secondary data, and descriptive analysis. The results show that the community needs to reduce the poverty rate by setting a passive survival strategy but, the conditions of their poverty do not end there. In addition to changing the condition, it is necessary to empower them through active and creative survival strategy. One of the strategies is to change their mindset of life, not only to survive but also to make changes that are better for their living and well-being. One of community empowerment functions is building capable communities. Therefore, they can process natural resources around the area from lower values industrial commodities to those of higher values, i.e. using 'insurance life-stock insurance model.

Keywords: Community Empowerment, Coffee Plantation, Living Condition, Life-stock Insurance, Poverty Rate, Well-Being.

1. Introduction

The The largest coffee producers in this planet are Brazil and the country is towards export markets oriented [1]. The country has realized that coffee has a positive impact on the socio-economic life of its people in Brazil [2][3]. Coffee is an essential and promising commodity but coffee farmers indicate inefficient, both technically and economically [4]. Likewise, coffee commodities in Indonesia are also able to boost the increase in foreign exchange.

Based on the data from the Secretariat General of the Ministry of Agriculture of the Republic of Indonesia [5] which recorded a surplus in the trade balance of Indonesian coffee imports and exports during 1980 to 2015. There is an average increase of 7.85 % per year. The most substantial surplus occurred in 2013, amounting to the USD 1 135 200 000, while the lowest surplus in 2001 was the USD 183 410 000.

One of the Indonesian coffee production centers is in the East Java Province. The core area in East Java is the Besuki Raya region. Its land area reaches 16 189 Ha from 46 000 Ha of coffee plantations. In detail, the land area of each district is as follows Table 1.

Correspondence:

Purwowibowo

Social Welfare Department,
Faculty of Social and Political
Science, University of Jember,
East Java, Indonesia.

Table 1: Coffe Production centers in the East Java Province.

District	Area of Coffee Plantation		Total	Harvest (ton)
	Arabica	Robusta		
Bondowoso	429	4 272	4 701	2 056
Situbondo	806	588	1 394	603
Jember	735	5 608	6 343	3 357
Banyuwangi	0	3 751	3 751	2 917

Source: Direktorat Jenderal Perkebunan 2015 – 2017[6].

In Bondowoso district, the area of cultivation and coffee commodities continues to grow along with various efforts to expand the area of land that continues to planted with coffee trees. In 2015, coffee production reached 1 500 t, and as many as 800 t exported with a selling value of IDR 48 000 000 000. Currently, coffee plantations continue to grow to reach 6 211 ha, and in 2010 there were only 1 346 ha. Bondowoso district is proclaimed as "Republic of Coffee" and rely on tourism based on coffee plantations [7].

Previously, this district was known as the city of Tape (fermented sweets made from Casava [Manihot esculenta Crantz]), however, along with further development of coffee productivity and related activities, the 'tape' commodity was displaced by coffee to the 2 nd number. Additionally, commodities of coffee add local revenue which drives many activities to enhance the development of coffee production. The revenues include seminars, discussions, workshops, exhibitions, and others. The "Plantation Tour" model is used as a tourist attraction in places like the Bondowoso coffee plantations to increase the welfare of the community [8].

The total area of Bondowoso Regency is about 156 010 ha, and in 2015, the population amounted to 390 617 people and was ranked as the lowest lagging district in East Java. The poverty reduction reached 0.02 % from 14.96 % to 14.76 %, this made the region a lagging region until 2017 when its poverty rate was around 14 %. In 2018, is targeted to decrease to 13 % by the development of a populist economy [9].

Relate to Perhutani's forests which use as "community forestry" programs [10]. This opportunity is used to improve the welfare of its people by planting coffee in forest areas. The collaboration of the Ministry of Forestry and other agencies to grow coffee on vacant lands is in line with the 'community forest' program. Coffee farmers get 2/3 of the harvest, while Perhutani gets 1/3 of it. This model increases coffee production making Bondowoso the largest producer of coffee in Indonesia.

Some people are not affected by this policy, they include people who are outside the coffee plantation areas. They live in poor condition and require attention to help improve their quality of life. Community empowerment needed according to potentials and environmental conditions. This model conducted through livestock breeding of both cattle and goats. This strategy implements active and creative methods to enable people living around coffee plantations to increase their socio-economic life. Farmers raise cattle and goats as 'livestock insurance' for those without formal insurance.

Empowering communities around coffee plantations is easy to do because there is positive energy between coffee plantations and livestock which refer to as a modern farming system. Its characteristics include different crops, plant residues, and organic fertilizers produced by livestock

which carry out the nutrient cycle. This model creates opportunities for increasing income with the increased demand for livestock products and opening employment opportunities in rural areas [11].

This paper describes the pattern and model of community empowerment according to locality and its application as a model for empowering communities around coffee plantations in the Bondowoso district and other regions.

2. Literature Review Community Empowerment

Top-down programs to eradicate poverty in rural areas have already been carried out, but none have been able to solve the conditions of poverty in the community. The amount of absolute poverty is still quite high, for example in 2015, there were still 28 590 000 people affected, and in 2016, it amounted to 28 510 000 people [12]. Although the percentage can be reduced, in absolute terms number, it continues to grow while the quality of life continues to deteriorate. They find it is increasingly difficult to meet their needs of life, primarily related to finding work because of the limited employment in the countryside.

Government efforts to empower the community and this model are the best alternatives to eradicate poverty. According to Peng at al.[13], much effort is needed to provide empowerment facilities according to the needs of the community by increasing the capacity of social institutions. Meanwhile, according to Kasam et al[14], community empowerment can be done by connecting community knowledge and the complexity of the environment. When activities are environmentally based, the community has the power to maintain and preserve ecological diversity. Marambanyika et al.[15], increasing the productivity of community land and diversifying crop cultivation can be followed in a participatory manner at a low cost. This model has a positive impact on poverty eradication. One way is to adapt to the environment by the context of rural communities and their socio-cultural conditions [16].

Likewise, Chikamatsu et al.[17], empowerment can be done through the selection of alternatives to make local agricultural production more profitable, through a cooperative approach, innovation and integrating yields that have high added value with processing from downstream to upstream. Furthermore, Bruschi et al.[18], empowerment must be limited and supervised by the authorities to enable sustainability of life, and environmental support goes hand to hand. Communities around the forest depend on local forest products to meet their daily needs. However, people often over-exploit and carry out destructive actions. There is a sustainable approach which involves local communities in the sustainable management of local resources and forests.

Feldhoff[19], using local resources and the surrounding forests leads to the reduction of various natural species. Therefore, involving as many people as possible can lead to more expectations on the sustainability of local resources. Through this model, public and state-owned assets can be active, innovatively, and creatively preserved to strengthen community resilience through strict government control. Furthermore, Teixeira et al.[20], empowerment is the conservation of various types of flora and fauna which threatened with extinction. The government alongside other related parties provide 'guidelines' in the form of sound

conservation and management procedures. Whereas Jovic; Suzana [21], suggested, the concept of sustainable development can be developed by awakening communities around the forest to participate in the management of biodiversity cheaply and efficiently.

Rural Community Empowerment Strategy Around Coffee Plantation

Turner et al.[22], using the regression and qualitative analysis of households in Africa to survive emerging changes in the environment: (i) relying on livestock to open livelihoods; (ii) cattle herding outside villages; (iii) higher risks related to use of land and socio-cultural and political changes. While Suthar[23], in India discovered an effective strategy for its people by treating solid waste from livestock which is used effectively as a resource for energy supply. Solid waste treatment also provides additional income. In rural, to become a strategic advantage for households and coffee farmers by small-scale production should be associated to local wisdom with local and national government for coffee consumer market [24].

In line with this, Tegebu et al.[25], stated that raising livestock for rural communities is a survival strategy to enable them to carry out basic life necessities. Also, raising livestock increases income and creates employment opportunities. Generally, raising livestock meets the adequacy of meat which continues to increase along with population growth and consumption patterns. In Mexico, according to Pattison et al.[26], expertly designed pig farming can be used as a sustainable resource strategy. The government provides facilities for access to nurseries and post-harvest to make it easier for farmers to sell their livestock products. On the other hand, in Brazil, there are the agroforestry systems come up as an alternative for the coffee farmers, by improving any productivities[27].

Hetherington et al.[28], in Sub Sahara Africa in creating a significant relationship between ownership and nutritional conditions of children. The variety of livestock owned both in number and type, depending on ecological zones-gender roles-is very important. Woman make a high and essential contribution to livestock activities because men work on plantations and land while the women are responsible for the livestock. Millar and John [29], in Laos environmental conditions, learning media facilitated by the government becomes attractive which stimulate farmers to adapt to farming methods. Communities can learn from the environment on housing and livestock pens that both can co-exist harmoniously. 5 years ago, the number of households that use fodder for fattening had increased by 6-fold.

Lin, Claire[30], stated that raising livestock for communities must be supported by information and communication technology. Barriers to the development of livestock can overcome with fast, precise, and useful knowledge. Appropriate technology, information, and communication can be designed to help alleviate barriers to gain knowledge for the poor on raising livestock. Whereas Zougmore et al.[31], stated that in West Africa, every sub-sector (plants, fishes, and livestock), climate change impacts, mitigation, and adaptation strategies had been analyzed, and they require information technology. With this model, rural communities can adopt livestock choices intelligently with climate change that occurs, and this can be performed by farmers starting from the national, regional, and local levels.

Manoli et al.[32], in Senegal, stated about 32 % of the rural areas are supported by large farms to enable them to supply the country's livestock trade which strengthen the community economy. Also, livestock functions as a capital account in banks enabling it to strengthen the community savings accounts and allows investments in other fields. Livestock serve as a means of guaranteeing livelihood security when climate change and extended dry seasons occur. In countries like America, according to Goldsmith; Filipe [33], the public is encouraged to conduct industrial livestock activities by the government by involving experts in the field of animal husbandry and industry-based with specific zoning. This model optimally integrates the livestock industry because it supported by zoning requirements, such as farms, waste management, sanitation systems, etc. which based on the Law[34].

Farming around buildings is a definite work result because it can be relied on and integrated. The law has a symbiotic mutualism because coffee skin (coffee pulp or coffee husk) preparations can serve as an excellent source of animal feed and can become compost manure. With just a simple procedure, coffee skin can use as the main ingredient of livestock rations. Coffee skin for animal feed reaches IDR 700/kg when less, it can import from other places[35]. Furthermore, grass and various leaves can be used to supplement livestock needs.

3. Methods

The research used information from various sources, especially those related to secondary data, data from the Central Bureau of Statistics and other institutions. Additionally, information obtained from various parties like research reports, national and international scientific journals, reports related to community empowerment both in general and on empowerment of rural communities. Furthermore, related to the international and national struggle for life, adaptation, and survival of active and creative rural communities, interviews were also conducted with the communities and various activities centered on coffee plantations. The informants in this research were coffee plantation workers and people living around the Coffee Plantation Company. Information for these people enriches the obtained data: the source and information triangulation used as the discussion material of this paper.

3. Result and Discussion

A high level of poverty still exists around rural communities around the coffee plantations in the Besuki region (Bondowoso, Jember, Banyuwangi, and Situbondo) is still high. There are many existing ways to alleviate poverty; some of them include the central, the regional, and local policies. However, these conditions can still be founded around coffee plantations.

Table 2: Area Coffee Plantation Bondowoso 2010-2016.

Year	Area (Ha)	Percentage (%)
2010	4.699	100,06
2011	4.882	103,89
2012	5.633	115,38
2013	5.957	105,93
2014	6.925	116,25
2015	7.138	103,08
2016	12.798	179,29

Source: Plantation Department Bondowoso District, 2017[36].

The number of poor people in the Besuki region is still quite high, and data from Bondowoso, Jember, Banyuwangi and Situbondo regencies are as follows: Bondowoso Regency in 2015 was 94 860 people (Central Bureau of Statistics, Bondowoso Regency 2015); Jember Regency in 2015 were 269 540 people and in 2016 there were 265.100 people [37]. Banyuwangi Regency in 2013 as many as 151 600 people [38], Situbondo Regency in 2012 as many as 294 993 people [39]. Poor people exist in rural and urban areas. In addition, the number of poor people around the coffee plantations is thought to be quite high.

One of the significant efforts is to empower the community. This strategy is bottom-up and is carried out by the poor themselves.

This model is considered to be the best alternative to alleviate poverty in rural areas around coffee plantations. Programs and activities should conduct as well as providing facilities according to the community needs. Also, support from local social institutions which suits the needs of the local community is needed, namely local knowledge and human resources. By this model, both by local government as the family associations and farmers, so that this activity reach greater sustainability in the municipality [40].

It needs to be supported by the management and administrative order, to enable empowerment to succeed according to the design and expectations [41]. It must be environment-based so that the relationship between community empowerment activities is done by linking the existing local environment [42]. Also, around coffee plantations, it can also be done by increasing land productivity and diversification of various crops [43].

Such a strategy is called environmental adaptation, and just environmental conditions around coffee plantations do not determine it, but also adaptations influenced by socio-cultural conditions of the community around the plantations. The adaptation model by choosing the right alternative from the existing local resources, from downstream to upstream enhances the added commodity value and provides employment opportunities [44]. The use of resources must be controlled to avoid excessiveness and destruction. Local wisdom is required and attention to local values of the environment as part of the ecosystem [45].

Another model is to carry out environmental conservation known as the conservation of flora and fauna so that the ecosystem is preserved [46] and automatically, this maintains the sustainability of community life around coffee plantations. Additionally, participation is necessary and vital contributes positively in conserving and managing biodiversity at a positive, low-cost, and much more efficient manner [47]. Empowering the poor around coffee plantations is carried out by using a livestock model, involving both cattle and goats. This model is made possible owing to the availability of cages and ingredients for animal feed. According to Turner et al. [48], this model is the same as rural house holds in Africa which survives environmental change by (i) raising livestock as a strategy to open livelihoods and increase income; (ii) conducting livestock grazing beyond the villages; (iii) such grazing has its advantages, but also has a higher risk related to the socio-cultural and political conditions of the rural areas.

4. Community Empowerment by Raising Cattle and Goats Around Coffee Plantation

By raising cattle and goats around the coffee plantations, it can process waste into a resource for energy supply [49].

The income from these activities can be used to improve the nutrition of children in rural areas. Simple fermentation technology is used and finally gets the attention of the local community and the central government and is then supported by policies that can increase the income of the poor rural people. It significantly allows people around coffee plantations to increase their income and explore new jobs [50]. With the choice of breeding livestock, they guaranteed that they could fulfill important needs and generally, they can adequately supply meat to the increasing population growth and increasing consumption patterns of the people today.

The farm model is effectively designed using local raw materials to economize production costs and obtain more sustainable results [51],[52]. Communities around coffee plantations that raise their yields can improve their children's nutrition with proper zoning and women's support. Higher success levels achieved because men can work in coffee plantations and still look for other jobs.

According to what happened in Laos, the strategy for fighting for their lives is related to the environment around them [53]. The environment used as a learning media and is facilitated by the government to attract farmers to diversify their business. Farming is carried out around their homes and side by side in harmony to filter out the conflict between those who breed and those who do not. For over 100 years, people living within the vicinity of coffee plantations have farmed next to their homes and reared goats and cattle. Likewise, the people of Laos and India make their livestock pens next to houses and live harmoniously with those who do not breed [54], [55]. Additionally, information technology needs to be supported to solve problems that arise related to farms.

Table 3: Catles, Goats, Sheeps in Bondowoso 2017 – 2021

Variance	2017	2021	Percentage
Catles	224.917	229.000	101,82
Goats	45.976	48.000	104,40
Sheeps	41.678	41.000	98,37

Source: Farm Department Bondowoso District, 2017 and 2021 [56]

In the Besuki area, people living around coffee plantations can raise cattle and goats, ranging from simple to small-scale livestock industries. Manoli et al. [57], in Senegal 32 % of settlements in rural areas are supported by livestock which is large enough to supply the livestock trade and strengthen the country's economy. Livestock also functions as an essential capital, called 'Bank Accounts', which allows farmers to invest in other fields and can be used as guarantors for livelihood security when disasters or long dry seasons occur. For the Besuki region, the livestock industry activities can be encouraged on a small scale to strengthen the regional and state economy [58] (Goldsmith and Filipe, 2014), which in turn can eradicate poverty in communities around the environment-based coffee plantations [59] (Erenstein and William, 2014).

5. Conclusion

The community empowerment in rural areas around coffee plantations can be used as a livestock model. This model is called the 'livestock insurance' strategy, and this is because livestock can be used to meet the needs of everyday life. When arises are 'sudden' and 'important' and require a large

amount of finance, then some livestock can be sold to finance their needs. Rural communities which are not familiar with formal insurance can use livestock as informal insurance. Additionally, it can serve as the cost of marriage, medical expenses, and other problems. A creative empowerment strategy can also follow farming, for example, livestock waste can transform into agricultural fertilizer that can be sold to increase income especially to communities around the coffee plantation area.

Acknowledgment

The author would like to thank profusely to the support of various parties. First, funding assistance and access for writers to participate in this International Seminar, especially Jember University through the Faculty of Social and Political Sciences. In addition to the writer's expectation that articles written and presented can be published in International Journals. Second, the entire JICC International seminar committee that provides speakers and regularly invites people to discuss this article. We are fully responsible for the contents of this paper. Third: Muhammadiyah University of Jember that was supporting this research.

References

- Brandao, F. S. et al. (2012). Export Market Orientation for Brazilian Coffee. *Coffee Science*, Lavras. v. 7, n. 3, p. 275-283, set./dez.
<http://www.coffeescience.ufla.br/index.php/Coffeescience/article/view/382/pdf>
- Junior, L. D. G. F.; Fabio, M. D. S.; Dantion, D. F.; Sergio, S. (2018). Characterization of the coffee fruit detachment force in crop subjected to mechanized harvesting. *Coffee Science*, Brazil, v. 13, n.1, p. 71–79, may.
https://www.researchgate.net/publication/325243181_Characterization_of_the_coffee_fruit_detachment_force_in_crop_subjected_to_mechanized_harvesting
- Barbosa, J. N.; Flavio, M. B.; Helena, M. R. A.; Margarete, M. L. V. 2010. Spatial distribution of coffees from Minas Gerais State and their relation with quality. *Coffee Science*, Brazil, v. 5, n.3, p. 237–250, jan.
https://www.researchgate.net/publication/282285382_Spatial_distribution_of_coffees_from_minas_gerais_state_and_their_relation_with_quality
- Freire, A. H. et al. (2011). Economic Efficiency of Coffee in The South of Minas Gerais: One Application of Production Frontier. *Coffee Science*, Lavras, v. 6, n. 2, p. 172-183, maio / ago.
<http://www.coffeescience.ufla.br/index.php/Coffeescience/article/view/310/pdf>
- Ministry of Agriculture of the Republic of Indonesia (2016)
- Direktorat Jenderal Perkebunan 2015 – 2017[6].
- Warta Kota, May 4 (2017).
- Purwowibowo and Sri Wahyuni. 2017. Plantation Tour Model: Peningkatan Kunjunganwisata Berbasis Kebun Kopi Di Wilayah Jember Dan Banyuwangi. *Prosiding Seminar Nasional Pariwisata*.
https://Repository.Unej.Ac.Id/Bitstream/Handle/123456789/82023/F.%20isip_Prosiding_Purwowibowo_Plantation%20tour%20model.Pdf?Sequence=1&Isallowed=Y
- BPS Bondowoso (2017)
- Perhutani (2010) *Perhutanan Sosial di Bondowoso*.
- Pasandaran, E., A. Djajanegara, K. Kariyasa dan Kasryno. 2005. *Kerangka Konseptual Integrasi Tanaman-Ternak di Indonesia. Integrasi Tanaman-Ternak di Indonesia*. Badan Penelitian dan Pengembangan Pertanian. Jakarta. 9-31 p.
- BPS (2015 dan 2016).
- Peng, L. P.; Shizuka, H.; Yeu, S. H. 2014. Institutional capacity and rural community planning in Japan: An event history analysis. *Paddy Water Environ*. Singapore, v. 12, n. 1, p. 55–69, jan.
<https://link.springer.com/article/10.1007/s10333-013-0359-1>
- Kasam, K. A. S.; Leanne, A.; Morgan, L. R. 2016. The cognitive relevance of indigenous and rural: Why is it critical to survival? *Cult Stud of Sci Educ*. Netherlands v. 12, n. 1, p. 97–118, aug.
<https://link.springer.com/article/10.1007/s11422-016-9745-5>
- Marambanyika, T.; Heinz, B.; Njoya, S. N.2017. Community strategies to promote sustainable wetland-based food security in rural areas of Zimbabwe. *Geo Journal*. Netherlands. v. 82, n. 5, p. 987–1003, oct.
<https://link.springer.com/article/10.1007/s10708-016-9724-0>
- Abdoellah, O. S. 1996. Social and environmental impacts of transmigration: a case study in Barambai, South Kalimantan. In Padoch, C., & Peluso, N. L. (Eds.), *Borneo in transition: People, Forests, conservation, and development* (pp. 266-279). Oxford University Press, London.
- Chikamatsu, S.; Jose, I. F.; Shen, L.; Yan, M. 2007. Copying with pressures of modernization by traditional farmers: A strategy for sustainable rural development in Yunnan, China. *J. of Mountain Science*. China, v. 4, n. 1, p. 57–70, mar.
<https://link.springer.com/article/10.1007/s11629-007-0057-9>
- Bruschi, P. ; Mancini, M.; Mattioli, E.; Morganti, M.; Signorini, M. A. 2014. Traditional of plants in a rural community of Mozambique and possible links with Miombo degradation and harvesting sustainability. *J. of Ethnobiology and Ethnomedicine*. UK, v. 10, n. 59, p. 1–22, jul.
<https://ethnobiomed.biomedcentral.com/track/pdf/10.1186/1746-4269-10-59>
- Feldhoff, T. 2013. Shrinking communities in Japan: Community ownership of assets as a development potential for rural Japan? *Urban Design International*. UK, v. 18, n. 1, p. 99–109, jan.
<https://link.springer.com/article/10.1057/udi.2012.26>
- Teixeira, P. H. R.; Thiago, D. N. T.; Jullio, M. R. F.; Severino, D. J. 2014. Local knowledge and exploitation of the avian fauna by a rural community in the semi-arid zone of northeastern Brazil. *Journal of Ethnobiology and Ethnomedicine*. Great Britain, v. 10, n. 1, p. 1–10, dec.
https://www.researchgate.net/publication/270002633_Local_knowledge_and_exploitation_of_the_avian_auna_by_a_rural_community_in_the_semi-arid_zone_of_northeastern_Brazil
- Jokovic, Z.; Susana, K.2015. Global strategies for sustainable use of agricultural genetic and indigenous traditional knowledge. *Springer Science+Business*

- Media Singapore. 39 R.K. Salgotra, B.B. Gupta (eds.), *Plant Genetic Resources and Traditional Knowledge for Food Security*. Singapore: Springer, p. 39–72. https://link.springer.com/chapter/10.1007/978-981-10-0060-7_3
22. Turner, M. D.; John, G. M. 2014. The role of livestock mobility in the livelihood strategies of rural peoples in Semi-Arid West Africa. *Hum Ecol. US*, v. 42, n. 2, p. 231–247, jan. <https://experts.syr.edu/en/publications/the-role-of-livestock-mobility-in-the-livelihood-strategies-of-rural-peoples-in-the-livelihood-strategies-of-rural-peoples-in-semi-arid-west-africa>
 23. Suthar, S. 2011. Utilizing livestock waste solids as bioresource for socio-economic sustainability: a report from rural. *Rev Environ Sci Biotechnol. Netherlands*, v. 10, n. 3, p. 193–197, sept. <https://link.springer.com/article/10.1007/s11157-011-9240-0>
 24. Campos, J. L. et al. 2009. The Strategic Advantage in The Coffee Market of Famili Agricultural in Alto Paraiso De Goias. *Coffee Science. Lavras*. v. 5, n. 2, p. 97–106. <http://www.coffeescience.ufla.br/index.php/Coffeescience/article/view/332/pdf>
 25. Tegebu, F. N.; Mathus, E.; Deckers, J.; Hale, E. M.; Nyssen, J.; Tollens, E. 2012. Rural livestock asset portfolio in northern Ethiopia: a microeconomic analysis of choice and accumulation. *Trop Anim Health Prod. Netherlands*, v. 44, n. 1, p. 133–144, jan. <https://link.springer.com/article/10.1007%2Fs11250-011-9900-7>
 26. Pattison, J.; Drucker, A. G.; Anderson, S. 2007. The cost of conserving livestock diversity? Incentive measures and conservation options for maintaining indigenous Pelón pigs in Yucatan, Mexico. *Trop Anim Health Prod. Netherlands*, v. 39, n. 5, p. 339–353, jun.. <https://link.springer.com/article/10.1007/s11250-007-9022-4>
 27. Neto, J. N. P., et al. 2014. Effects of environmental variables in coffee PRODUCTION in agroforeSTRY system. *Coffee Science, Lavras*, v. 9, n. 2, p. 187–195, abr./jun. http://www.coffeescience.ufla.br/index.php/Coffeescience/article/view/597/pdf_84
 28. Hetherington, J. B.; Anke, K. W.; Joe, N.; Siobhan, M. M. 2017. Livestock ownership, animal source foods and child nutritional outcomes in seven rural village clusters in Sub-Saharan Africa. *Agriculture & Food Security. Negara ra*, v. 6, n. 9, p. 1–11, jan. <https://agricultureandfoodsecurity.biomedcentral.com/tack/pdf/10.1186/s40066-016-0079-z>
 29. Milliar, J.; John, C. 2010. Strategies for scaling out impacts from agricultural systems change the case of forages and livestock production in Laos. *Agric Hum Values. Netherlands*, v. 27, n. 2, p. 213–225, jun. <https://link.springer.com/article/10.1007/s10460-009-9194-9>
 30. Lin, Y.; Claire, H. 2010. Creating the livestock guru: ICTs to enhance livestock related knowledge among poor households in Orissa, India. *Trop Anim Health Prod. Netherlands*, v. 42, n. 7, p. 1353–1361, oct. <https://link.springer.com/article/10.1007/s11250-010-9592-4>
 31. Zougmore, R.; Samuel, T. P.; Mathieu, O.; Bamidele, O. 2016. Toward climate-smart agriculture in West Africa: A review of climate change impacts, adaptation strategies and policy developments for the livestock, fishery, and crop production sectors. *Agric & Food Security. Great Britain* v. 5, n. 1, p. 1–16, d https://www.researchgate.net/publication/311212383_Toward_climate-smart_agriculture_in_West_Africa_A_review_of_climate_change_impacts_adaptation_strategies_and_policy_developments_for_the_livestock_fishery_and_crop_production_sectors
 32. Manoli, C.; Veronique, A.; Christian, C.; Alexandre, I.; Benoit, D. 2014. How do pastoral families combine livestock herds with other livelihood security means to survive? The case of the Ferlo area in Senegal. *Research, Policy, and Practice. German*, v. 4, n. 3, p. 1–11, dec. <https://link.springer.com/content/pdf/10.1186%2F2041-7136-4-3.pdf>
 33. Goldsmith, P.; Fillipe, P. 2014. Outlining a strategic legitimacy assessment method: The case of the Illinois livestock industry. *Agric Hum Values. US*, v. 31, n. 2, p. 215–230, jun. <https://pubag.nal.usda.gov/catalog/248621>
 34. Erenstein, O.; William, T. 2010. Crop–livestock interactions along agro–ecological gradients: A meso–level analysis in the Indo–Gangetic Plains, India. *Environ Dev Sustain. Jerman*, v. 12, n. 5, p. 669–689, oct. https://www.researchgate.net/publication/225116226_Crop-livestock_interactions_along_agro-ecological_gradients_A_meso-level_analysis_in_the_Indo-Gangetic_Plains_India
 35. Hermanto. 2018. Perlu Integrasi Peternakan di Perkebunan Kopi Gayo. Available on: <http://www.lintasgayo.com/21031/perlu-integrasi-peternakan-di-perkebunan-kopi-gayo.html>.
 36. Direktorat Jendral Perkebunan. Statistik Perkebunan Indonesia. 2017. AvailableBPS on: <http://ditjenbun.pertanian.go.id/tinymcpuk/gambar/file/statistik/2017/Kopi-2015-2017.pdf>. Accessed: 17 dec. 2017.
 37. Central Bureau of Statistics of Statistics Jember regency. (2017). Available on: <https://jatim.antaranews.com/berita/188565/bps-jumlah-penduduk-miskin-di-jember-turun>
 38. Central Bureau of Statistics Banyuwangi Regency. [2017]. Available on: <https://news.detik.com/berita-jawa-timur/d-3531851/angka-kemiskinan-banyuwangi-turun-menjadi-879-persen>.
 39. Peixoto, J. N. S., et al. 2017. Family Coffee and Good Agricultural Practices in Bom Sucesso – MG. *Coffee Science, Lavras*, v. 12, n. 3, p. 365 - 373, jul./set. http://www.coffeescience.ufla.br/index.php/Coffeescience/article/view/1298/pdf_1298
 40. Peng, L. P.; Shizuka, H.; Yeu, S. H. 2014. Institutional capacity and rural community planning in Japan: An event history analysis. *Paddy Water Environ. Singapore*, v. 12, n. 1, p. 55–69, jan. <https://link.springer.com/article/10.1007/s10333-013-0359-1>
 41. Kasam, K. A. S.; Leanne, A.; Morgan, L. R. 2016. The cognitive relevance of indigenous and rural: Why is it critical to survival? *Cult Stud of Sci Educ. Netherlands* v. 12, n. 1, p. 97–118, aug. <https://link.springer.com/article/10.1007/s11422-016->

