Producer farmer’s sovereignty in dry land and swamps areas

RN Suhaeti ¹ and S Wahyun²
¹,²Center for Agro-socio-Economic and Policy Studies, Ministry of Agriculture
Jalan Tentara Pelajar 3B, Bogor, West Java, Indonesia, 16111
Telp/Fax: (0251) 8333964
rgandasoemita@yahoo.com
maloleyayuk@yahoo.com

Abstract: Farmers could perform their farming if they have sovereignty on their farming production inputs and marketing. Suboptimal land, such as dry land and swamps areas have good prospect if applying appropriate technologies. A research in 2015, on status of farmers’ sovereignty, had been conducted in Piani and North Candi Laras Subdistricts, Tapin District, South Borneo Province, representing swamp land and dry land respectively. Data and information were obtained through interviewing related agencies at provincial and district levels and 30 units of farmer’s households. The primary and secondary data were analyzed descriptively. The research results showed that farmers in swamps and dry land were categorized as large farmers and had sovereignty over the land and production. Water shortage and excessive in both land types could be overcome by giving access on appropriate technology such as programs making farmers improve their farming techniques and providing levees. In addition, land certification program, farming expansion and constructing new irrigated lowland were also some efforts to improve farmers’ sovereignty. It was crucial to identify and improve farmer’s sovereignty indicators through research in larger sites and samples.

1. Introduction
Indonesia has been struggling for people’s right on food through Law No. 18/2012 chapter I, Article 1 paragraph 2 [22] on Food Sovereignty. The food sovereignty was "the right of the state and nation to independently to determine food policy, guarantee the right on food for the people and society to determine the food system in accordance to the potential of local resources". The right of the state/nation of Indonesia in determining food policy independently or joining other countries was clear. Referring to [32] define food sovereignty, as a critical alternative to the concept of food security, was broadly defined as the right of local peoples to control their own food systems, including markets, ecological resources, food cultures, and production modes.

As a member of ASEAN Economic Community (AEC), Indonesia was to increase food trade competitiveness [14]. The people's right on food was continually improved based on eight aspects, 17 indicators of food security as indicators to evaluate the program achievement [10]. However, the farmers’ sovereignty indicator has not been released yet, although almost five years since the food sovereignty legislation has been established. Altieri and Nicholls [4] suggest that the key importance will be the involvement of farmers directly in the formulation of the research agenda and on their active participation in the process of technological innovation and dissemination through models that focus on sharing experiences, strengthening local research and problem-solving capacities. Furthermore, [3] in Oakland, California, and Seattle, Washington, showed that food sovereignty articulates with the work of food justice and community food security activists. Although the two research sites indicated very different cases, but they suggested that a shift towards food sovereignty necessitates a broad acknowledgement of and resistance to neoliberalism.
As [20] proposed the sovereignty indicator from the aspect of nutrition and [15] through food diversification. It was emphasized by [26] the importance of food politics as one of the pillars in addition of two other pillars namely competitiveness (competitive advantage) and food availability. The ideas proposed by [20], [15] and [26] have already covered in 17 food security indicators [11].

The report of [27] reviewed various references and argued that it was necessary to differentiate the sovereignty of farmers on food as consumers and at a time as food producers (farmers). Indicators for farmer’s food sovereignty as consumer referred to [11] while indicator for food producers (farmers) were seven indicators covering land, water, seeds, fertilizer/pesticides, technologies, production/consumption and marketing. Thus, it was necessary to investigate the sovereignty of farmers as producers referring to seven indicators proposed as the first step of sovereignty indicators for farmers as producers. Meanwhile [19] described that food is primarily sold, processed, resold and consumed locally, with many people deriving their incomes and livelihoods through work and activities at different points of the food chain, from seed to plate.

The government’s effort to fulfill the food needs besides refer to the law also utilize suboptimal land maximally because majority of land in Indonesia was suboptimal such as dry land 148 million Ha (76.5%) from total land in Indonesia which was 188.2 million Ha and swamp land [13] of 33.4 million Ha (17.7%). According to [1], dry land which was suitable for agricultural cultivation was about 76.22 million Ha (52%) while swamp land used for agricultural land was only about 5 million hectares or less than 15 percent. It was reported that at present, at least 33 million hectares of swamp lands were ready to be converted into agricultural areas, because the technology needed were already generated and had been implemented in some areas. The expansion of swamp land for agriculture has been accompanied by technology ranging from land management, cropping pattern, agricultural machine tools and appropriate rice varieties for swamp land [10].

In 2015 the government has constructed swamp land for agricultural purposes with a size of 2,270 Ha (23.8%) of the total swamp area that could be used for agriculture. It was targeted to reach 200,000-500,000 ha/year, so that the potential for swamp land for agricultural activities were about 9.9 million [7]. Most suboptimal land was off Java Island, but most farmers were in Java Island [9]. Based on the above facts, it was required a strategy/policy to maximize the potential of suboptimal land. Since farmers would provide maximum performance if they were sovereign over their farms, it was necessary to examine whether farmers in the suboptimal land had already got sovereignty over their own farms. This paper presents farmers’ sovereignty in suboptimal land. Such information was important as a benchmark of sovereign indicators for further refinement and evaluating the achievement of food sovereignty programs as well as motivating farmers in suboptimal lands to maximize farming performance.

2. Methodology

2.1. Theoretical framework
Agricultural development was not only to increase production but also improve farmers’ welfare [14] where sovereignty aspect was an important consideration and should first be sought. The approach of food sovereignty has the humanist and ecological side that could complement and improve the weakness of the concept of food security [28]. Furthermore [29] presented seven indicators of sovereignty of farmers and [27] emphasized that farmer as producer was categorized sovereign if a farmer had an easy access and suitable control over seven indicators of food sovereignty as described in Diagram 1. According to [31], access are: (1) A way of getting near, at, or to something or someone; (2) a way of being able to use or get something and (3) permission or the right to enter, get near, or make use of something or to have contact with someone, while control was the power to control, dominate or govern.
2.2. Location
Total size of dry land in Indonesia was 102.3 Ha and the largest was in Borneo Island (39.2 Ha) followed by Sumatra Island (19.3 Ha), Papua (17.3 Ha) and Celebes Island (9.5 Ha). Borneo Island also has the largest swamp area in Indonesia (10.9 Ha), therefore Borneo Island was selected as the research location. The determination for research sites at the provincial level was also based on the land area, where the Province of South Borneo has the largest dry land and swamp land of 552,338 Ha and 248,771 Ha respectively [13]. At the district level, the location was determined based on the results of discussions with the Agricultural Technical Service Office of South Borneo Province and the Provincial Food Security Agency, and Tapin District was then selected as the research location. Tapin District has a total area of 2,700.82 km² consisting of 12 sub-districts, each sub-district has an almost equal area, except North Tapin Subdistrict as the smallest area of 71.49 km² (2.65%) as compared to other districts. The largest sub district was North Candi Laras covering of 730.48 km² (27.04% of the Tapin District’s total area), which was selected as the research site of swamp land while for dry land was Piani Sub-district. Population number of Tapin District was 167,796 persons.

2.3. Data analysis
Primary quantitative and qualitative data related to seven indicators of food sovereignty were obtained through interviews with 15 farmers in dry land and 15 other farmers in swamp lands, officials of related institutions at provincial, district and sub-district levels. Secondary data were obtained from office and reports from relevant agencies and various sources of publications. Data and information analysis using qualitative and quantitative approaches referring to [17] as presented in Table 1.
Table 1. Qualitative and quantitative information

| Qualitative | Information                                      | Quantitative Information                                      |
|-------------|--------------------------------------------------|----------------------------------------------------------------|
| Measuring objective Fact | Farmer’s characteristic, ecological and socio-culture, implemented technology and production. | Translating the reality and cultural means | The existence of 7 indicators of farmers’ sovereignty |
| Focus on variables | 7 indicators of farmers’ sovereignty | Focus on the process and even interactively | The existence of 7 indicators of farmers’ sovereignty 5 years ago |
| Reliability was the key official | Collected from farmers and officials | Authenticity was the key | Provide description of sovereignty process |
| Value-free | | The presence of values explicitly | The value of land 5 years ago |
| More cases and subject | Cases of dry and swamps land | Less cases and object | Interview farmers on two different types of land |
| Statistical analysis | Cross table analysis | | Produce policies related to farmer sovereignty over food |
| Researchers did not involve | Researchers collecting the data and do the interview | Thematic Analysis | Data diggers were researchers who simultaneously observe the fact of the natural and socio-economic environment. |

Sources: [17]

3. Results and discussion

3.1. Farmers’ characteristics

Average farmer’s age in both research sites was in the productive age range, namely 44 years in swamp lands and 48 years in dry land. The difference age was due to the fact that swamp land farmers were indigenous people, so that their age varied while farmers in dry areas were transmigrants who came in 1974, so that during the survey, most of the were old already. The average number of household members was four persons respectively with two people engaged in agriculture. The highest educational attainment of farmers were high school level (33%) in swamp land, while it was only 6 percent in dry land, some even had never been attended to school at all, therefore many transmigrants were illiterate.

3.2. Farmers’ Sovereignty

Table 2 indicated that from the seven indicators, farmers in swamp and dry land were sovereign on seeds, medicines and production/consumption, compare to other indicators. The sovereignty of the seeds was obtained because the farmer has full access to the seeds of their own production with high quality that was strongly believed to be good and in accordance to their favourite taste. However, according to [16] dispossession on farmer’s sovereignty on seeds, as one of the main production inputs) through the development and deployment of new agricultural technologies and the global extension of laws and regulations governing Intellectual Property Rights (IPRs), will constitute substantial challenges to the independence and well-being of farmers worldwide. In addition, [32] stated that seeds are an essential component of the food system and life literally begins with, and remains possible, because of seeds. Furthermore, [33] also said the very same thing with [16] about corporate-driven food system.

The sovereignty over pesticides was obtained because they were easily accessible to buy at the production input market or production input kiosk and often even get promotions from pesticide factories with free of charge so that farmers also have full control over the use of medicines as desired. The detail explanation of farmer’s sovereignty over the seeds was presented in Table 3. All farmers in dryland and 93 percent in swamp lands possessed an easy access on seeds from their own local superior seeds. The popular swamp rice varieties were Siam Rata, Siam Rukut, Siam Sabak, Siam Mutiara and Siam Unus. In the dry land of local superior rice varieties were Bagadai, Siam Putih, Siam Kupang, Pandak, and IR Gunung. The seeds were planted since they have been cultivated the varieties for decades and they preserved the varieties because according to them, the varieties tasted well and the price were more expensive. All farmers in swamp lands and most dry land farmers (87%) had strong control over the seeds in accordance with their wishes. The used seeds were their owned yield, which were local superior varieties that widely favored by the local community and neighboring communities in adjacent districts.
of other provinces such as Balikpapan District, East Borneo Province. Farmers had tried to plant new rice varieties such as Inpara, Mekongga and Ciherang but rats attacked the plants so that farmers replanted local rice varieties.

**Table 2. Farmers' Sovereignty Level in Swamp and Dry Land in Tapin, South Borneo, 2015**

| Indicators               | Swamps     | Dry land   | Level of Sovereignty* |
|--------------------------|------------|------------|-----------------------|
|                          | Access (%) | control    |                       |
| 1. Land                  | 40         | 93         | II                    |
| 2. Water                 | 54         | 37         | III                   |
| 3. Seed                  | 61         | 100        | I                     |
| 4. Fertilizers           | 87         | 44         | II                    |
| 5. Pesticide             | 90         | 80         | I                     |
| 6. Technology            | 53         | 70         | II                    |
| 7. Production/ consumption | 90         | 78         | I                     |

*(I=Sovereign (score>75%; II= almost Sovereign (score 50-75%) and; III=Not yet sovereign (Score < 50%))

Source: Primary data (processed)

**Table 3. Farmers' access and control in swamp and dry lands of South BorneoonSeeds, in 2015**

| Access to get seeds: | Swamps | Dryland | Average | Control | Swamps | Dry | Average |
|----------------------|--------|---------|---------|---------|--------|-----|---------|
| Own production       | 93     | 100     | 92      | Seeds were appropriate (%) | 100 | 87 | 94 |
| From program         | 7      | 0       | 4       |

| Access to get seeds: | Swamps | Dryland | Average | Seeds were appropriate since 5 years ago (%) | 100 | 87 | 94 |
| from own production  | 53     | 87      | 70      |

| Access to get seeds: | Swamps | Dryland | Average | Seeds were appropriate until the next 5 years (%) | 100 | 87 | 94 |
| from own production  | 40     | 74      | 57      |

Source: Primary data (processed)

Farmers in both locations had easy access to buy fertilizers and medicines, for medicines farmers often get free from the drug factory. Simultaneously they got subsidy from the government’s program such as, the SLPTT and GP-PTT programs which provide fertilizer. This finding supported by [21] and it was suggested that food sovereignty did not urge to go beyond price policies and protectionism only, but also for well accepted new technologies and research programs.

Sovereignty over production/consumption was obtained because farmers in swamp lands were sovereign to the land since they have control over 2.27 and 2.02 Ha of land respectively (Table 4). Control over the land status was also in accordance to their wishes because 93% of farmers in the swamp and dry land own the land. The control on land keeps farmers in control over the production, so that the majority had enough food and even more than enough. Sovereignty over production also allows sovereign farmers to allocate good quality rice as seeds and no difficulty in marketing, farmers in both lands declare have a harmonious relation with the rice trader and the existing marketing system. Farmers also admit that land certification, as one the land reform types, could improve their accessibility on land as [23] and [2] also stated.

However, access on land was not easy because the conversion on land for shops, industries and housing [12]. In dry land, access to land was difficult because outsiders buy land for the coal industry at IDR 160 - 200 million/Ha while farmers could only buy at a price of 30 million/Ha. Another obstacle was that the distance of farmland was far from the settlement and there was no farm road facility so that access to cultivate land to improve the cropping index was difficult to achieve. However, the importance of increasing farmer access to land was realized by the government, [8]. The government would increase the number of owner farmers and grant land management rights to landless farmers or who have only been laborers to maximize agricultural land. As explicitly stated by [30] that the government would construct about nine million hectares of agricultural land in the border area and would distribute it to 4.8 million small farmers. Through these programs, farmers' access on land was expected to increase. It is
also expected, that improving access on for smallholder farmers, rice production at national level would increase. Because there were small scales farmers the back bone of food providers as also stated by [4] that even at global level, the smallholder food growers also serve as food providers. Land ownership status in both location (93%) owner, legality of farmer land in swamp land majority girik (village level land certificate) as inheritance of ancestor while in dry land already in certificate of property rights as transmigrants so that both have strong legality. As a large farmer, owner status, supported by strong legality farmers in both locations have full control over their land.

Table 4. Farmers’ access and control over land in dry and swamps land of South Borneo Province, 2015

| Access to current land and next five years (%) | Swamps | Dry | Average | Control Average land holding Ha | Swamps | Dry | Average
|-----------------------------------------------|--------|-----|---------|---------------------------------|--------|-----|---------|
| Farmers who declare easy access to current land and next five years (%) | 47     | 40  | 44      |                                | 2.02   | 2.27| 2.25    |
| Farmers who declare easy access to land certification (%) | 33     | 47  | 40      | Land ownership (%) | 93     | 93  | 93      |
| Farmers who claim easy access to new paddy fields (%) | 0      | 0   | 0       | Legality of land (%) | 33     | 60  | 47      |

Source: Primary data (processed)

Famers in swamp lands have limited access and control over water (54 and 37%) as compared to farmers in dry lands (Table 5) having higher access and controls (58 and 93%). However, both sites have high access (74%) to technology (swamp land) and 73% (dry land), which made farmers adjust/control the water in accordance with commodities, planting patterns and varieties and manage the water to achieve maximum production. Wet land farming was entirely dependent on the presence of water from the sea, when the water begins to recede slightly before farmers could cultivate the land. If therewasa long drought, it could be planted twice or if the perimeter of the land has been made of levee, water could be arranged and farmers would cultivate twice/year. Some farmers, between March and April, just began to grow rice and harvest around July to October, after which the water for farming relying solely on rainwater. Farmers, who claimed to have access to water for farming was only 40%. The Agricultural Technical Service Office overcame the water conditions by providing pumping assistance, but has not been effective so farmers choose not to plant anything during the rainy season. In 2014 the Ministry Public Works assisted in the construction of dikes on farmers’ land of 2000 meters by one meter height and each yearwas gradually expanded. The program gives farmers hope (53%) that access to water for the next five years would be easier compared to 5 years ago, 67 percent of farmers acknowledge difficult access to water.

Table 5. Farmers' access and control over water in swamp and dry land of South Borneo, 2015

| Access to get water in 2015 (%) | Swamps | Dry | Average | Variable of control Water was controlled by planting appropriate varieties (%) | Swamps land | Dry land | Average
|--------------------------------|--------|-----|---------|---------------------------------|-------------|----------|---------|
| Access to get water five years ago (%) | 40     | 40  | 40      |                                | 87          | 93       | 95      |
| Access to get water five years ago (%) | 67     | 74  | 70      | Water was controlled by building levees (%) | 25          |          |         |
| Perception on access to get water in the next 5 years (%) | 53     | 60  | 57      |                                |             |          |         |

Source: Primary data (processed)

In dry land the availability of water was known to farmers since occupy the location of transmigration, rice cultivation was fully adjusted to the existing water conditions then they planted local variety called gogo (unirrigated rice field on dry land) once a year, after rice field left unplanted. Farmers constructed a 4 x 3 X 2 meter levee so that the water would not exhaust but it had not been effective because the water was very little so that it did not sustain, therefore farmers who have easy access to farm water was only 40 percent. On dry land, access to water for the next five years was reported by 60 percent of the farmers easy, given the current existing government programs to address water for household purposes by creating a pipeline from the foothills to the farmhouse for household needs. In the future,
60 percent of farmers were optimistic that irrigation system to paddy field would also be better, not as difficult as five years ago (74%). Farmers' control of water was done by adjusting the available water-based commodities based on experience during the farm, 83 and 93 percent respectively in swamp and dry land.

To achieve maximum efficiency of water in swamp land, there were some technologies implemented by the government through program namely SLPTT, GP-PTT, rice-fish cultivation or mina padi, fishpond under chicken’s cage (Long Yam) and fishpond under duck’s cage (Long Tik). These programs have succeeded in motivating farmers to cultivate abandoned land. In Buas-buas Hilir Village, originally no farmers were interested in farming but nowadays farmers were competing to cultivate the village land. Farmer would get permission as long as they cooperate with agencies such as the Agricultural Technical Service for Seeds in order to obtain guidance. There were even farmers who dare to rent swamp land for 1 kg of rice/m². The technology implemented through the above programs increases the cropping index up to three times on tidal-swamp land of 119 Ha and 40 Ha of dry land [12]. The importance of government’s support for farmers is also emphasized by [25].

4. Conclusion and Recommendation

Based on the above description, there were three most important indicators to achieve farmers’ sovereignty namely: land, water and technology. The suggested improvement on land sovereignty was through land certification program and the expansion of agricultural land as well as opening of new wetland. Overcoming the water problem in swamp land was by making levee and deepening of river that should be continue to be done gradually so that all land could reach recommended cropping intensity (CI) 200. Implementation of program with production input such as fertilizer, pesticides and technology should be intensified through program, which had been implemented such as GP-PTT.

Since these indicators were considered as initial indicator of farmer’s sovereignty, research in various regions with more samples and different agroecosystem should be conducted in order to obtain better and more valid data. In addition, it would be a lot better if information on farmer’s participation and benefit of the sovereignty development were also parts of the research. Especially considering the opinion of [20] that the concept of food security it is not always positively correlated with national sovereignty.

5. Acknowledgments

Acknowledgments addressed to Mrs. Ir. Sunarsih Sunyoto MS. as the leader of the research team on the "Study of Farmers Empowerment Strategy Strengthening Food Sovereignty as Implementation of Act. No. 18 of 2012 "at the Indonesian Center for Agricultural Socioeconomic and Policy Studies in 2015 and all members of the team, namely Dr. Syahyuti, Ir. Wahyuning K.S and Miftahul Aziz, SP, which had given trust to the author to write the research results as one of the sub-chapters of the final report and published the results of special research for the Province of South Borneo.

6. References

[1] Abdurachman A, Dariah A, and Mulyani A. 2008. Strategi dan teknologi pengolahan lahan kering mendukung pengadaan pangan nasional. Jurnal Litbang Pertanian. Bogor. 27 (2): 43-49.

[2] Agarwal B. 2014. Food sovereignty, food security and democratic choice: critical contradictions, difficult conciliations. The Journal of Peasant Studies, 2014 Vol. 41, No. 6, 1247–1268, http://dx.doi.org/10.1080/03066150.2013.87699

[3] Alkon AH and Mares TM. 2011. Food sovereignty in US food movements: radical visions and neoliberal constraints. Agric Hum Values DOI 10.1007/s10460-012-9356-z.

[4] Altieri MA and Nicholls CI. 2008. Scaling up agroecological approaches for food sovereignty in Latin America. Development, 2008, 51(4), (472–480), © 2008, Society for International Development 1011-6370/08 www.sidint.org/development/

[5] Altieri MA and Toledo VM. 2011. The agroecological revolution in Latin America: rescuing nature, ensuring food sovereignty and empowering peasants. The Journal of Peasant Studies Vol. 38, No. 3, July 2011, 587–612
[6] Altieri MA, Funes-Monzote FR and Petersen P. 2011. Agroecology, small farms, and food sovereignty. Agron. Sustain. Dev. DOI 10.1007/s13593-011-0065-6. 32:1-13

[7] Andryani R. 2015. Inovasi pertanian di lahan rawa. Balai Pengkajian Teknologi Pertanian Aceh. Badan Litbang. Kementan.

[8] Andrinof C. 2014. Mimpi kedaulatan pangan Indonesia. Harian Jurnal Asia. November 15. Jakarta.

[9] Badan Pusat Statistik. 2014. Statistik Indonesia 2014. Jakarta.

[10] Badan Penelitian dan Pengembangan Pertanian. 2013. 400 Teknologi pertanian dan implementasinya dalam Program Swasemepada Pangan. Kementerian Pertanian. Jakarta.

[11] Badan Ketahanan Pangan. 2012. Rencana Kinerja Tahunan. Kementerian Pertanian. 23 hal.

[12] Badan Ketahanan Pangan Provinsi Borneo Selatan. 2014. Laporan Tahunan.

[13] Haryono. 2012. Lahan rawa, lumbung pangan masa depan Indonesia. IAARD Press. Badan Penelitian dan Pengembangan Pertanian. 142 pp.

[14] Heriawan R. 2016. Memahami indikator kesejahteraan petani. Focus Group Discussion (FGD). Pusat Sosial Ekonomi dan Kebijakan Pertanian. Bogor, 25 Mei. hlm. 4.

[15] Khudori K. 2009. Mewujudkan kedaulatan pangan melalui diversifikasi pangan. 2009, 18(4): 15-21.

[16] Kloppenburg J. 2010. Dispossession, enabling repossession: Biological open source and the recovery of seed sovereignty. Journal of Agrarian Change, Vol. 10 No. 3, July 2010, pp. 367–388.

[17] Neuman WL. 2011. Social Research Methods: Qualitative and Quantitative Approaches, 7th Edition, University of Wisconsin, Whitewater.

[18] Patel RC. 2012. Food Sovereignty: Power, Gender, and the Right to Food. PLoS Med 9(6): e1001223. https://doi.org/10.1371/journal.pmed.1001223 [Accessed 20 May 2017]

[19] Pirmiter M. 2009. Towards Food Sovereignty. Gatekeeper Paper No. 141: November 2009:1-20. International Institute for Environment and Development (IIED). London, UK.

[20] Purwiyatno H. 2011. Riset dan teknologi pendukung peningkatan kedaulatan pangan. Pusdiklat Kementerian Luar Negeri. Jurnal Diplomasi. 2011, 3(3): 90-105.

[21] Quaye W. 2007. Food sovereignty and combating poverty and hunger in Ghana. Tailoring Biotechnologies. Summer 2007, 3(2): 69-78.

[22] Republic of Indonesia. 2012. Law 12/2012 on Food Sovereignty. Jakarta.

[23] Rosset P. 2008. Food Sovereignty and the Contemporary Food Crisis. © 2008 Society for International Development 1011-6370/08 www.sidint.org/development/. J. Development, 2008, 51(4), 460-463.

[24] Rosset P. 2013. Fixing our Global Food System: Food Sovereignty and Redistributive Land Reform. Monthly Review; New York 61.3 (Jul/Aug 2009): 114-128.

[25] Sujono. 2008. Mewujudkan Kedaulatan Pangan Nasional, Mungkinkah. Jurnal Ilmiah Bestari. No 38/thXXI. Hei – Agustus. Hal 58 – 60.

[26] Sutarto A. 2008. Kedaulatan pangan dan pepemimpinan. Divisi Riset dan Perencanaan Strategis Perum Bulog. Okt-Des, 2008, XVII (52): 69 – 82.

[27] Sunarsih, Syahyuti, Wahyuningsih K., Wahyuni S and Aziz M. 2015. Studi penyusunan strategi pemberdayaan petani memperkuat kedaulatan pangan sebagai implementasi UU No.18 Tahun 2012. Laporan Penelitian Pusat Sosial Ekonomi Pertanian dan Kebijakan Pertanian. Bogor.

[28] Syahyuti. 2011. Paradigma kedaulatan pangan dan keterlibatan swasta: Ancaman terhadap ketahanan pangan. Analisis Kebijakan Pertanian Vol.09 No.01 2011. Pusat Sosial Ekonomi dan Kebijakan Pertanian. Bogor.

[29] Syahyuti, Sunarsih, Wahyuni S, Wahyuningsih KS dan Aziz M. 2015. Kedaulatan pangan sebagai basis untuk mewujudkan ketahanan pangan nasional. Forum Penelitian Agroekonomi. Vol 33 No. 2, Desember: 95-109.

[30] Tambunan TT. 2016. Penguatan UMKM dalam rangka kedaulatan pangan. Jurnal Prisma, 2016 (1): 36-48.

[31] Webster M. 2015. Kamus Besar Inggris-Indonesia.
[32] Wittman H. 2011. Food sovereignty a new rights framework for food and nature? Environment and Society: Advances in Research 2 (2011): 87–105 © Berghahn Books doi:10.3167/ares.2011.02010

[33] Wittman H, Desmarais A, and Wiebe N. 2017. The origins & potential of food sovereignty. Working paper at foodfirst.org. [Accessed June 23, 2017].