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## **STRENGTHENING ENTREPRENEURSHIP FOR SORGHUM BASED PRODUCTS BY TRAINING, VISIT, AND ONLINE EXTENSION (TVO) SYSTEM**

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### **ABSTRACT**

Strengthening Entrepreneurship is essential for the development of new products-based sorghum which is as an alternative food product of carbohydrate sources, and in the future can be optimized into functional food components. This research aims to develop of sorghum-based entrepreneurship which is expected to enlarge the business capacity and scope of marketing, and the research uses qualitative research method in entrepreneurship. The results showed that the strengthening of sorghum entrepreneurship by using Training, Visit, and Online extension (TVO) System method includes development of technology package from research result on sorghum product sustainable as a healthy food future which must be supported by availability of superior varieties, processing technology, and knowledge about functional food benefits, as well as business packages with the establishment of entrepreneurial units in various groups according to their capabilities, building of sorghum network, opening up new markets by utilizing information technology, thereby eventually enlarge the business capacity and scope of marketing area.

Keywords: sorghum product; strengthening sorghum entrepreneurship; training, visit, and online extension (TVO) system

## **Introduction**

Research on Strengthening Entrepreneurship for Sorghum Based Products is a follow-up study of research activities and community service on the development of sorghum as an alternative food done at UWKS-Indonesia, where entrepreneurship activity, especially entrepreneurship based on sorghum: sorghum rice, sorghum flour, soft bran sorghum, and stems of sorghum, beginning with various research activities, resulting in various products of the researches are: sorghum cake and cookies (Noerhartati, 2010; Noerhartati et al., 2010), sorghum syrup (Noerhartati & Rahayuningsih, 2010a; Noerhartati & Rahayuningsih, 2010b), a variety of sorghum pastries and bread (Noerhartati, 2014), sorghum noodles (Noerhartati & Rahayuningsih, 2015), Brownis sorghum is very potential to be developed as an entrepreneurship product (Rizal, 2015), sorghum tape product (Retnowati, 2015), sorghum rice and flake (Noerhartati & Puspitasari, 2016), a variety of soft bran sorghum cake and cookies (Noerhartati & Rahayuningsih, 2016), and sorghum tempe product as a product of sorghum rice fermentation that has potential as an entrepreneurship product (Safitri, 2015), sorghum chips (Marda, 2017), stick sorghum (Noerhartati, et al., 2017b) and bakpao sorghum as one of sorghum-based entrepreneurial products that become the choice of food products (Putri, 2017) and also the activity of community service by Centre for Entrepreneurship Sorghum (CSE)-UWKS (Noerhartati et al., 2010; 2013; 2016; 2017; 2018). Based on that, the research is continued to strengthening entrepreneurship for Sorghum Based Products by Training, Visit, and Online extension (TVO) System method, it is necessary with the aim to develop entrepreneurial based sorghum which is expected to enlarge the business capacity and scope of marketing.

## **Research Methods**

The research uses qualitative research methods in entrepreneurship, a descriptive qualitative action research (Kemmis, 1997; Grundy, 1995; McTaggart et al., 1997) by using TVO System methods (Noerhartati et al., 2018), including the development of technology packages and business packages (Figure 1, and 2). The data was retrieved through a series of observations, completion of questionnaires, and in-depth interviews. Furthermore, the data and information obtained were analyzed statistically.

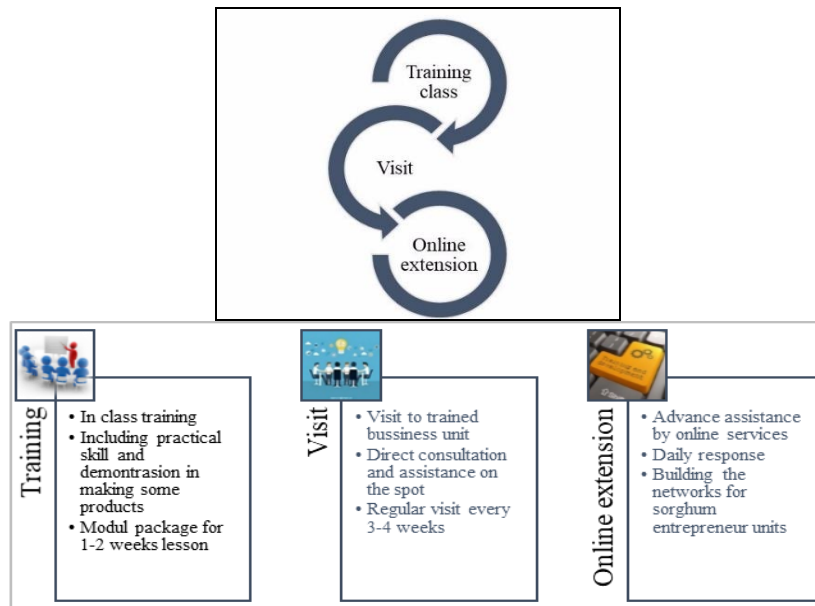


Figure 1. TVO System Methods (Noerhartati et al., 2018)

### Result and Discussion

Based on the level of entrepreneurship education, the aims of the education can be categorized as follows: building potential entrepreneur, creating nascent entrepreneur (beginner), and developing dynamic entrepreneur (a new establish business). This category follows the concept of UBESS (Fayolle, 2007; Noerhartati et al., 2018), in which the level of entrepreneurship education is classified into four stages: awareness education, start-up education, continuing education, and education for entrepreneurial dynamism (see Figure 2). Based on the results of research and community service about the development of sorghum as alternative food done at UWKS, finally in 2016 formed CSE-UWKS, then CSE established Sorghum o Entrepreneurship Unit (SEU), and furthermore to strengthen entrepreneurship by TVO (Noerhartati et al., 2018) (Figure 3).

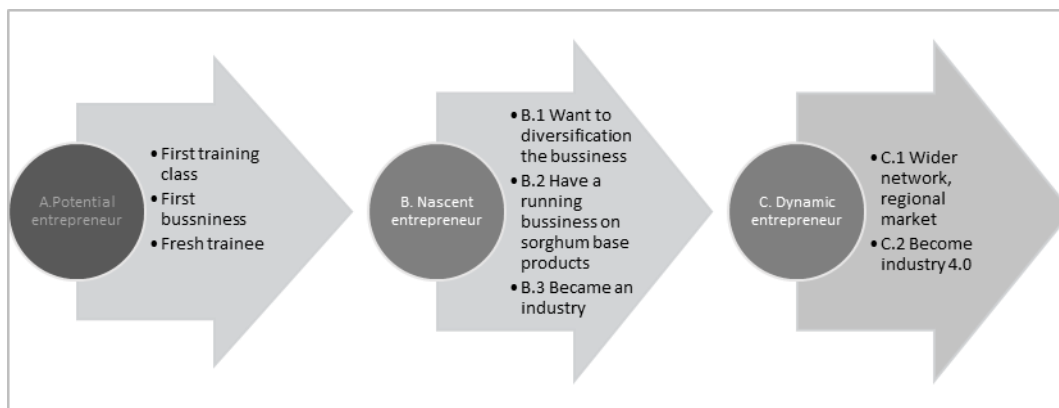


Figure 2. Stage of entrepreneur (Fayolle, 2017; Noerhartati et al., 2018)

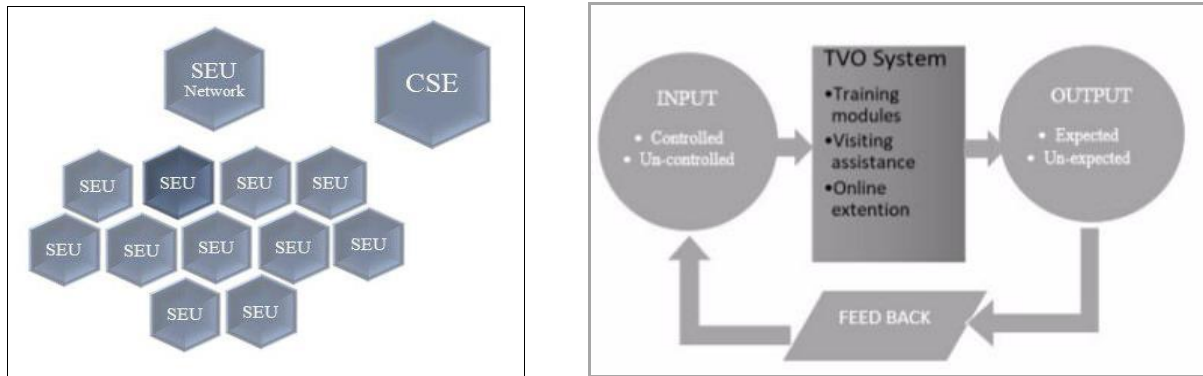


Figure 3. Strengthening SEU by TVO (Noerhartati et al., 2018)

Table 1. Stage Entrepreneur of 26 SEU after Strengthening Entrepreneurship by TVO System

Stage Entrepreneur	Gender		Product				Age (year)			
	Female	Male	Raw material	Cake/cookies	Batik, T-shirt, souvenir	Rice product	20-30	30-40	40-50	50-60
A. Potential entrepreneur • First training class • First business • Fresh trainee	3	2	-	4	-	1	3	-	1	1
B. Nascent entrepreneur B.1 Want to diversification the business	6	4	-	6	1	2	4	3	1	2
B.2 Have a running business on sorghum base products	5	2	2	4	-	1	-	1	6	-
B.3 Became an industry	3	1	1	2	1	-	-	-	4	-
C. Dynamic entrepreneur C.1 Wider network, regional market C.2 Become industry 4.0	-	-	-	-	-	-	-	-	-	-

Source: Noerhartati et al., 2016; 2017a; 2018.

Figure 3 show that, input. controlled: trainer, tutor, training material, space and equipment for practice; un controlled: candidate entrepreneur, and the criteria of spy entrepreneur candidates to be controlled must meet the requirements: academic-level education, are in

culinary business, minimum age 20 years, and have a business vision, and want to cooperate and share in the network of entrepreneurship sorghum; training: TVO system develop by CSE-UWKS, this study was induced by the CSE-UWKS team as a facilitator of change. The team prepared modules on change materials and practical knowledge and encouragement and assistance as needed and capability, with activities: in class training; Including practical skill and demonstration in making some products; Module package for 1-2 weeks lesson. Observations with quantitative data collection after receiving the module, then performed data processing descriptively. CSE-UWKS until 2018 has formed 26 SEU types are: SEU seeds, rice, flour, cake, cookies, bread, sorghum rice, ice cream sorghum, sorghum vase, sorghum batik, sorghum shirts, sorghum souvenir, and sorghum syrup (Noerhartati et al., 2016-2018; Amue & Adiele, 2012; Chandra, 2015); visiting assistance: visiting assistance: the visit is conducted by the CSE-UWKS team to all SEUs, where the activities include: visit to trained business unit; direct consultation and assistance on the spot; regular visit every 3-4 weeks. Observation with quantitative data collection after the visit activity, then performed data processing descriptively. The result of the visit activity is obtained by each entrepreneur on some can be categorized as follows: building potential entrepreneur, creating nascent entrepreneur (beginner), and developing dynamic entrepreneur (a few establish business) (Cannon, 1978; Tzokas et al., 2004); online extension: online extension activities include: advance assistance by online services; daily response; and building the networks for sorghum entrepreneur units. Build the sorghum network, create a sorghum website, open new markets by utilizing information technology (market place), thereby increasing the business capacity and scope of marketing area (Menrad, 2003; Kangama, 2005; Tjaturarsi & Noerhartati, 2017; Noerhartati, 2017); output. expected: Sorghum Entrepreneurship Units (SEU) (Table 1) and network SEU, and un expected: SEU that do not enter the network. Table 1 showed that 26 SEU groups are divided, based on gender consisting of 65% female and 35% male; based on the resulting product consists of 11.5% producer of sorghum raw material: grain, rice, flour, soft bran, and sorghum stem; 61.5% producer of various products of cake / cookies: , 8% producer of product from sorghum rice: tempe, tape, rice, tumpeng, and other product producers: syrup of sorghum stem, sorghum batik, sorghum shirts, sorghum vase , and sorghum souvenirs 19%; based on age(year): 27% 20-30 year, 15% 30-40age, 46% 40-50 year, and 12% 50-60 year. CSE-UWKS by TVO system can increase 81% of SEU stage at least 1 level, while the other 19% still require more visit and online extension. CSE\_UWKS hopes that all SEU will unite and become agents of change around them, which will eventually enlarge the market segment, which in turn farmers are increasingly eager to produce sorghum to invite other farmers, furthermore, eventually becoming a national-sorghum. Factors affecting the SEU are capitalization, it still takes time to prepare and mobilize personnel, feel quite with current conditions or natural principles alone, personnel are still study, and raw material difficulty. Then the feedback received by CSE is: 1-3 product focus tutorials, direct practice copied, online system response faster, to help connect the SEU with banking / People's Business Credit, and expand the network of raw material suppliers

## **Conclusions**

Method of Training, Visit, and Online extension (TVO) system can be used for Strengthening Entrepreneurship for Sorghum Based Products program by CSE-UWKS, includes development of technology package from research result on sorghum product sustainable as a healthy food future which must be supported by availability of superior varieties, processing technology, and knowledge about functional food benefits, as well as business packages with the establishment of entrepreneurial units in various groups according to their capabilities, building of sorghum network, opening up new markets by utilizing information technology, Thereby eventually it can gradually strengthen the SEU by increasing the level and

strengthening the SEU network continuously served by CSE, so that the SEU network can enlarge the business capacity and scope of marketing area.

## References

- Amue, G. J., & Adiele, K. C. (2012). New product development and consumer innovative behaviour: an empirical validation study. *European journal of business and social sciences*, 1(6), 97-109.
- Cannon, T. (1978). New product development. *European Journal of Marketing* 12(3), 217 – 248.
- Chandra, S. T. (2015). Process analysis and evaluation of new product development at UD Raja Maritim. *Jurnal Agora*, 3(1), 285-292
- Fayolle, A. (2007). *Handbook of research in entrepreneurship education*, volume 1: a general perspective. Northampton, MA: Edward Elgar Publishing Limited.
- Kangama, C.O. (2005). Introduction of sorghum into China: *African Journal of Biotechnology*, 4 (7), 575-579.
- Kemmis, S., & McTaggart R. (1997). *The action research planner*. Geelong: Deakin University.
- Kholiq, R. (2015). The making of sorghum brownis: a study of the types and concentrations of sorghum flour. *Thesis Report*. Universitas Wijaya Kusuma Surabaya.
- Irbawan, MI. (2017). Entrepreneurship sorchips (sorghum chips) to support food sovereignty in Indonesia. *Proceeding Dies Natalis 36 Universitas Wijaya Kusuma Surabaya*, 164-170
- Menrad, K. (2003). Market and marketing of functional food in Europe: *Journal of Food Engineering* 56(2-3), 181-188.
- Noerhartati, E. (2010). *Various industrial products made from wheat and sorghum*. Agriculture Department Provincial Government of East Java.
- Noerhartati, E. (2014). Product variety cookies, flakes, sticks, mie sorghum, *Proceedings of National Seminar of SPRINT 2014 LIPI Yogyakarta*, 235-238.
- Noerhartati, E., (2017). Building a network of entrepreneurship supports sorghum development as an alternative food: *Proceeding of National Seminar of Dies Natalis 36* (pp.39-48). Surabaya: Universitas Wijaya Kusuma Surabaya.
- Noerhartati, E., & Puspitasari, D. (2016). Flake sorghum (sorghum sp): study on type and concentration of sorghum flour. *Proceeding International Conference on Food Agriculture and Natural Resource* (pp. 83-94).
- Noerhartati, E., Puspitasari, D., Rahayuningsih, T., Rejeki, FS., & Wedhowati, ER. (2010). *Various cookies made from flour sorghum, activity report of "Si Unyil TV TRANS 7"*, Universitas Wijaya Kusuma Surabaya.
- Noerhartati, E., Widiarti, T., Maslihah, & Karyanto, N.D. (2016). *Activity report of IBIKK production center of sorghum product at UWKS (Year 1)*, Universitas Wijaya Kusuma Surabaya.
- Noerhartati, E., Widiarti, T., Maslihah, & Karyanto, N.D.. (2017a). *Activity report of IBIKK production center of sorghum product at UWKS (Year 2)*: Universitas Wijaya Kusuma Surabaya.
- Noerhartati, E., Widiarti, T., Maslihah, & Karyanto, N.D. (2018). *Activity report of IBIKK production center of sorghum product at UWKS (Year 3)*: Universitas Wijaya Kusuma Surabaya.
- Noerhartati, E., & Rahayuningsih, T. (2012a). Characterization of sorghum liquid sugar, *Journal of Agroteknologi*, 7(2), 111-119.

- Noerhartati, E., & Rahayuningsih, T. (2012b). Liquid sugar of sorghum stemp: a study of extraction methods. *Proceeding PERTETA* (pp.60-67). Malang: Universitas Brawijaya.
- Noerhartati, E., & Rahayuningsih, T. (2015). Optimization of sorghum instan noodles product: a study of the characteristics of red sorghum (*Sorghum bicolor*) and white sorghum (KD4). *Proceeding International Seminar of Resource, Environment, and Marine in the Global Challenge* (pp.50-67). Surabaya. Universitas Wijaya Kusuma Surabaya.
- Noerhartati, E., & Rahayuningsih, T. (2016). Soft bran of sorghum potential for high fiber supplement food. *Proceeding Innovation of Food Technology (IFC) 2016* (pp. 131-137). Surabaya: Universitas Katolik Widya Mandala Surabaya.
- Noerhartati, E., Rahayuningsih, T., Rejeki, FS., & Wedhowati, ER. (2010). *Activity report of IBM business group sorghum syrup*, Universitas Wijaya Kusuma Surabaya.
- Noerhartati, E., Puspitasari, D., Rahayuningsih, T., Rejeki, FS., & Wedhowati, ER. (2013). *Activity report of IBM business group of sorghum flour*, Universitas Wijaya Kusuma Surabaya.
- Noerhartati, E., Rahayuningsih, T., & Mujianto. (2017b). Stick sorghum (*sorghum sp*) as food diversification alternative products. *Jurnal Reka Pangan*, 11(2), 38-44.
- Ningsih, PW., Noerhartati E., & Rahayuningsih, T. (2017). Potential of bakpao sorghum supports Indonesian food diversification. *Proceeding Dies Natalis 36* (pp. 171-178). Surabaya: Universitas Wijaya Kusuma Surabaya.
- Retnowati (2015). *Sorghum tape making: study from long immersion and yeast concentration. Thesis Report*. Universitas Wijaya Kusuma Surabaya.
- Safitri (2016). Making tempe sorghum: study of type of sorghum rice and packer type. *Thesis Report*. Universitas Wijaya Kusuma Surabaya
- Grundy, S. (1995). *Action research as on-going professional development*. Arts Accord Affiliation of Arts Educators (WA).
- McTaggart, R., Henry, H., & Johnson, E. (1997). Traces of participatory action research: Reciprocity among educators. *Educational Action Research*, 5(1), 123-140.
- Widiartin, T., & Noerhartati, E., (2017). Building sorghum website as facilities promotion center research and development of sorghum in University Wijaya Kusuma Surabaya. *Jurnal Simetris*, 8 (2), 477-482.
- Tzokas, N., Hultink E.J, & Hartc, S. (2004). The new product development process. *Journal of Industrial Marketing Management*, 33, 619– 626.

