Data Article

Data on agricultural and nonagricultural land use in peri-urban and rural area

Mohammad Rondhi a, *, Pravitasari Anjar Pratiwi a, Vivi Trisna Handini a, Aryo Fajar Sunartomo b, Subhan Arif Budiman c

a Department of Agribusiness, Faculty of Agriculture, University of Jember, Indonesia
b Department of Agricultural Extension, Faculty of Agriculture, University of Jember, Indonesia
c Department of Soil Science, Faculty of Agriculture, University of Jember, Indonesia

A R T I C L E   I N F O

Article history:
Received 7 December 2018
Received in revised form 17 February 2019
Accepted 21 February 2019
Available online 1 March 2019

Keywords:
Peri-urban area
Rural area
Land use characteristics

A B S T R A C T

The data in this article describes the land use characteristics at peri-urban and rural areas, on Jember District, in the Province of East Java, Indonesia. The types of land use covered in the data are agricultural and residential land. The data was a result of a research collaboration between the Department of Agribusiness, Department of Soil Science, and the Department of Agricultural Extension in the University of Jember. The general purpose of the data collection was to compare the characteristics of different land use in the peri-urban and rural area. The data has been compiled to investigate the economic rent of varying land use in peri-urban and rural areas to explain the dynamic of farmland conversion, and to investigate the farmland distribution among farmer in the peri-urban area. The data contains technical and socio-economic aspects of land use in peri-urban and rural areas. The data were collected through structured interviews with farmers and homeowners in each area. A total of 200 interviews were conducted to 100 farmers and homeowners. The location of each respondent was recorded with the location-marking feature of the GPS to represent the distribution of samples. The tracking feature of the GPS was used to locate the physical infrastructure such as irrigation canal, road, and market. In total, the data contained 29

* Corresponding author.
E-mail address: rondhi.faperta@unej.ac.id (M. Rondhi).

https://doi.org/10.1016/j.dib.2019.103804
2352-3409/© 2019 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).
variables and attached as the supplementary material of this data article.

© 2019 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).

Specifications table

| Subject area            | Agriculture, Geography, Economics |
|-------------------------|-----------------------------------|
| More specific subject area | Agricultural economics             |
| Type of data            | Table and Figure                   |
| How data was acquired   | Structured interviews with farmers and homeowners using questionnaire; geographic location of each house and farmland of the respondents determined using handheld GPS. |
| Data format             | Raw                                |
| Experimental factors    | The data was undergone correction from entry errors, nonresponse, and inaccurate GPS coordinates |
| Experimental features   | 50 farmers and 50 homeowners were randomly selected in each area |
| Data location           | Kepanjen village, subdistrict of Gumukmas (rural) and Antirogo village, subdistrict of Sumber Sari (peri-urban) in the District of Jember, Province of East Java, Indonesia |
| Data accessibility      | The data was attached to this data article as Supplementary Material |
| Related research article | 1. M. Rondhi, P.A. Pratiwi, V.T. Handini, A.F. Sunartomo, S.A. Budiman, *Agricultural land conversion, land economic value, and sustainable agriculture: A case study in East Java, Indonesia* [1]  
2. P.A. Pratiwi, M. Rondhi, *Distribusi Kepemilikanahan Pertanian Dan Pendapatan Usahatani Di Wilayah Perkotaan Kabupaten Jember* [2] |

**Value of the data**

- The data can be used to compare farming practice in rural and peri-urban areas.
- The data can be used to investigate the competition between agricultural and non-agricultural land use in the rural and peri-urban areas.
- The data can be used to compare the pesticide use behavior between rural and peri-urban farmer.
- The data can be used to compare the farming practice between food and non-food crops.
- The data can be used to measure the economic rent of different land use in the rural and peri-urban area.

1. Data

The data contains information on technical and socio-economic aspects of farmland and housing in the rural and peri-urban areas. The exact location of each rural farmland (Fig. 1), rural house (Fig. 2),

**Fig. 1.** The distribution of the sampled farmland in the rural area.
peri-urban farmland (Fig. 3), and peri-urban house (Fig. 4) were determined using GPS. The variables representing technical and socio-economic aspects were collected through interviews with farmers and homeowners. The description of each variable, the unit of measurement, the nature of data, and the source from which the data were obtained are presented in Table 1. In addition, the data regarding the general conditions of each village were obtained from the village’s official profile.

The data is provided in a Microsoft Excel format consisting of six sheets. The first sheet contains information on rural agriculture; the second contains variable on rural housing. The information on peri-urban agriculture and housing are contained in the third and fourth sheets. For each land use (agricultural and housing), we used the same variables regardless of the area. Finally, the general conditions of each village are presented in the fifth and sixth sheets.
Table 1
The variables in the data.

| Subjects | Variables | Descriptions                                                                 | Measure  | Unit     | Source |
|----------|-----------|-------------------------------------------------------------------------------|----------|----------|--------|
| Agriculture | age       | Farmers age in the interview                                                  | Scale    | yr       | Interview |
|           | education | The latest formal education certificate                                       | nominal  |          | Interview |
|           |           | (1 = elementary education; 2 = junior high school; 3 = senior high school; 4 = higher education) |          |          |         |
|           | landtype* | The type of land cultivated by farmers                                         | nominal  |          | Interview |
|           | crop      | The type of crop planted on a particular season                               |          |          |         |
|           | production| The produce of the crop planted on a particular season                        | Scale    | kg       | Interview |
|           | harvest_price | The price of the produced crop at harvest                                     | Scale    | rp kg⁻¹  | Interview |
|           | lab_cost  | The cost of labor for a particular season                                     | Scale    | rp       | Interview |
|           | ferti_cost| The total cost of fertilizer for a particular season                          | Scale    | rp       | Interview |
|           | pest_cost | The total cost of pesticides for a particular season                          | Scale    | rp       | Interview |
|           | irri_cost | The cost of irrigation water for a particular season                          | Scale    | rp       | Interview |
|           | mech_costb | The cost of agricultural machinery services for a particular season          | Scale    | rp       | Interview |
|           | seed_cost | The total cost of seed for a particular season                                | Scale    | rp       | Interview |
|           | irri_infra| The existence of irrigation infrastructure                                    | Nominal  |          | Interview |
|           |           | (1 = exists; 2 = doesnot exists)                                              |          |          |         |
|           | land_loc  | The coordinate (latitude and longitude) of farmer’s land                      | Scale    | GPS      |         |
| Housing   | age       | The age of the homeowner at the time of the interview                         | Scale    | yr       | Interview |
2. Experimental design, materials, and methods

The sampling determination was conducted in two stages. The first stage was aimed to determine the population of farmers and homeowners in the rural and peri-urban area. The population of farmers in the rural area is 783 farmers, while there are 1056 farmers in the peri-urban area. The population homeowners in the rural and peri-urban area are 3011 and 3050 respectively. In the second stages, 50 farmers and 50 homeowners in each village were randomly selected as the final sample.

The data collection was conducted in two stages. In the first stage, we collect data on the technical and socio-economic characteristics of farmers and homeowners. The data was collected through personal interviews to farmer and homeowner using a structured questionnaire by a trained enumerator. In the second stage, the location of each house and farmland, as well as irrigation canal, road and market were geolocated using GPS by a different team of the surveyor.

Acknowledgments

We are grateful for the Regional Development Planning Agency (BAPPEDA) Jember for funding this data collection under grant number: 074/339.1/310/2017. We wish to acknowledge the helpful support of farmers and homeowners for their participation in the data collection. We are also grateful to The University of Jember for the support. Finally, all error is ours.

Transparency document

Transparency document associated with this article can be found in the online version at https://doi.org/10.1016/j.dib.2019.103778.
Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.dib.2019.103804.

References

[1] M. Rondhi, P.A. Pratiwi, V.T. Handini, A.F. Sunartomo, S.A. Budiman, Agricultural land conversion, land economic value, and sustainable agriculture: a case study in East Java, Indonesia, Land 7 (2018), https://doi.org/10.3390/land7040148.

[2] P.A. Pratiwi, M. Rondhi, Land ownership and farm income distribution among farmers in the peri-urban area in Jember (Distribusi Kepemilikan Lahan Pertanian Dan Pendapatan Usahatani Di Wilayah Perkotaan Kabupaten Jember), SEPA J. Sos. Ekon. Pertan. Dan Agribisnis. 15 (2018) 81, https://doi.org/10.20961/sepa.v15i1.25056.

[3] Badan Pusat Statistik, Kecamatan Gumukmas Dalam Angka (Gumukmas Subdistrict in Figure), Badan Pusat Statistik Kabupaten Jember, Jember, 2015. https://jemberkab.bps.go.id/publication/2016/01/22/e7696861560ee4e4e35c9133a0/kecamatan-gumukmas-dalam-angka-2015.html.

[4] Badan Pusat Statistik, Kecamatan Sumbersari dalam Angka (Sumbersari Subdistrict in Figure), Badan Pusat Statistik, Jember, 2017. https://jemberkab.bps.go.id/publication/2017/09/26/3fae00de2809c1adb1a63902/kecamatan-sumbersari-dalam-angka-2017.html.