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Article

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GENERAL & APPLIED ECONOMICS | RESEARCH ARTICLE

Pastoral household's perceptions of non pastoral activities in Yabello district, Oromia region, Ethiopia

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Abstract: The study examined the pastoralists' perception towards non-pastoral activities and the proportion of pastoralist income from diverse livelihood activities in the pastoral areas of the Yabello district. Data were obtained from a survey of 180 household heads selected using a simple random sampling technique. Key informant interviews and focus group discussions were undertaken to gather data having qualitative nature. Descriptive and inferential analyses were used to analyze the data. The result shows that livestock rearing and crop production (72.49%) were the major sources of income for the respondents. A greater proportion (40% i.e. cumulative percentages of those who agree and strongly agree) of the household support that crop cultivation is as important as livestock rearing. Greater proportions (88.8%) of pastoral households also support that, practicing non-pastoral non-farm activities reduces climate-related risks, and the majority support undertaking diverse activities than relying on a single income source. The results also indicated that younger household heads, households with larger family sizes and lower livestock holding, and closer to the nearest market had positive perceptions towards non-pastoral activities. Pastoralist perception towards non-pastoral activities is gaining positive pattern and

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PUBLIC INTEREST STATEMENT

Borana pastoralist of southern Ethiopia is known by longstanding mobile livestock rearing. Different manmade and natural shocks have eroded potential of livestock which reduced pastoralist reliance on pure pastoralism. Due to this livelihood diversification has become the most pressing issue among pastoralist in arid and semi-arid land, because pastoralists are facing multiple challenges that deprive their major livelihood option which is pastoralism or livestock rearing. Diversification of income source by pastoralist is the center of interest for both development practitioner and local governments. Pastoralists had different perception towards livelihood option outside pastoralism and their perception has been changing through time. Therefore, this study clearly figures out the perception of pastoral households towards livelihood option outside pastoralism. This is because currently pastoral livelihood is facing climate related challenges and difficulties which in turn have severe impact on pastoral communities. Hence studying pastoralists' perception has countless importance before any intervention made in the area.

thus indicating the need for policy and development practice in line with their choice and ensuring sustainable livelihood.

Subjects: Sustainable Development; Rural Development; Economics and Development

Keywords: Non-pastoral activities; Pastoralist; Perception

1. Introduction

Ethiopia has an estimate of over 10 million pastoralists and, which make up about 12% of the total population (Ethiopian Ministry of Agriculture, 2013). Pastoralists herd their livestock in the arid and semi-arid lowlands that are prone to rainfall variability, extreme drought and flash floods. They are marginalized and forsaken by the central government as well as policy makers, who are almost from the high land area, in different dimension of development intervention relative to their crop producer's counterpart (African Union, 2010). Even though the pastoral system is not commercial oriented, pastoral and/or lowland areas contribute much to domestic and international trade and livestock are not only used for subsistence livelihoods (Ministry of Agriculture, 2013). The livestock sector, which is largely concentrated in arid and semi-arid regions, contributes 12–16% of Ethiopia's gross domestic product (GDP) and 30–35% of the agricultural GDP (Birhanu et al., 2015).

Analysis of land cover and land use dynamics during the past several decades reveals an increasing pattern of sedentarization in Borana pastoralists which restricts pastoral mobility, facilitates loss of common grazing areas, and increased market access and dependence. This in turn, increases opportunities for diversification of activities for the poor, who would have few alternatives if they remained in the rangelands (Abebe, 2016). Transitioning into agro-pastoralism, which have a link with sedentarization, is one of the most common forms of diversification and is increasing immensely from time to time. Farming in the Borana tradition had been considered as *falfala* (evil or disgraceful), perhaps, because of its perceived resource competition with livestock production. However, pastoralist non-pastoral adaptation strategies in recent decades are found to be highly dominated by the less rewarding competitive pressures of private rangeland enclosures for opportunistic cereal cultivation and growing involvement of the poor in low-return activities (Birhanu & Beyene, 2015).

In response to different threats that pastoral livelihood encounter, pastoralists are engendered to diversify their activities and assets from which they derive a living. This reduces their reliance on pure pastoralism. Multi-faceted problems decreased the dependency of Borana pastoralist only on pastoral system and enforce them to diversify their livelihood to non-livestock based activities, including land cultivation (Hurst et al., 2012). These as well change pastoralist perception toward other livelihood activities outside pastoralism.

Perception influence people's decisions both in deciding to act or not and what adaptive measures are taken over the short and long term. The perception analysis made by Bunting et al. (2013) illustrates that both environmental condition and socio-economic institutions have combined influence on determining a household's ability to create more resilient livelihood outcomes. Pastoral systems are in a dynamic process and so is the perception of communities about the system. In Borana, pastoralist perceived growth of the human population, highlighting increased demand for cereal grains for human consumption. Thus, household perception towards non-pastoral livelihood option is changing. Therefore, this research aimed at generating information on the pastoralist households' perception towards non pastoral livelihood options as well as income from diverse livelihood activities in study area.

2. Methodology

The study was carried out in Yabello District, one of the districts in the Borana zone of Oromia region which lies 570 km south of Addis Ababa. It is bordered on the South by Dire, on the West by Teltele, on the North by Dugda Dawa, and on the East by Arero Districts. The altitude of this district ranges from 350 to 1800 meters above sea level at the latitude and longitudes of 4°53'N 38°5'

E4.883°N 38.083°E respectively and at an elevation of 1857 meters above sea level. Map of the study area is depicted in [Figure 1](#)

This research was conducted in Yabello distinct from the Borana zone of the Oromia region. Three-stage sampling technique was used to select the respondents and kebeles from the district. Firstly, kebeles were stratified into two livelihood systems: pastoralist dominated and agro-pastoralist dominated kebeles. The reason for classifying kebeles based on their livelihood zone was to attain the most representative sample from the district. The households in one livelihood zone were relatively assumed to be more homogenous because they share common livelihood activities than others. This is to take the perception of the pastoralists in different livelihood zone concerning non-pastoral livelihood activities. Once stratified based on their livelihood systems then 2 kebeles from pastoralist dominated and 1 kebele from agro-pastoralist dominated were selected randomly. Lastly, total of 180 sample households was selected randomly from the kebele. Sample respondents were determined according to the proportion of total households in kebele to sampling frame or total population. [Table 1](#) shows the proportion of the sample respondent from each sample kebele

Data were collected from the sample households, Key informants such as Kebele administrators, communities' elders, development agents (DAs), and rural and pastoral development experts in the district using structured interview schedule and focus group discussion. In order to achieve the stated objectives of the study, the survey data were summarized and analysed using descriptive analysis and inferential analysis using STATA software version 13. Similarly, respondents' perceptions which have five likert-type scales were measured by using frequency distribution, mean and standard deviation. Qualitative data were narrated to complement the finding of the study.

3. Results and discussion

3.1. Composition of household income from diverse livelihood activities

[Table 2](#) shows that income from the pastoral and farming activities contributed 72.49% to the total households annual income from which livestock sale share 40.08% and, 3.41% was from sale of livestock product. Crop production, which is currently expanding in pastoral area, contributes 29% to

Figure 1. Map of the study area.

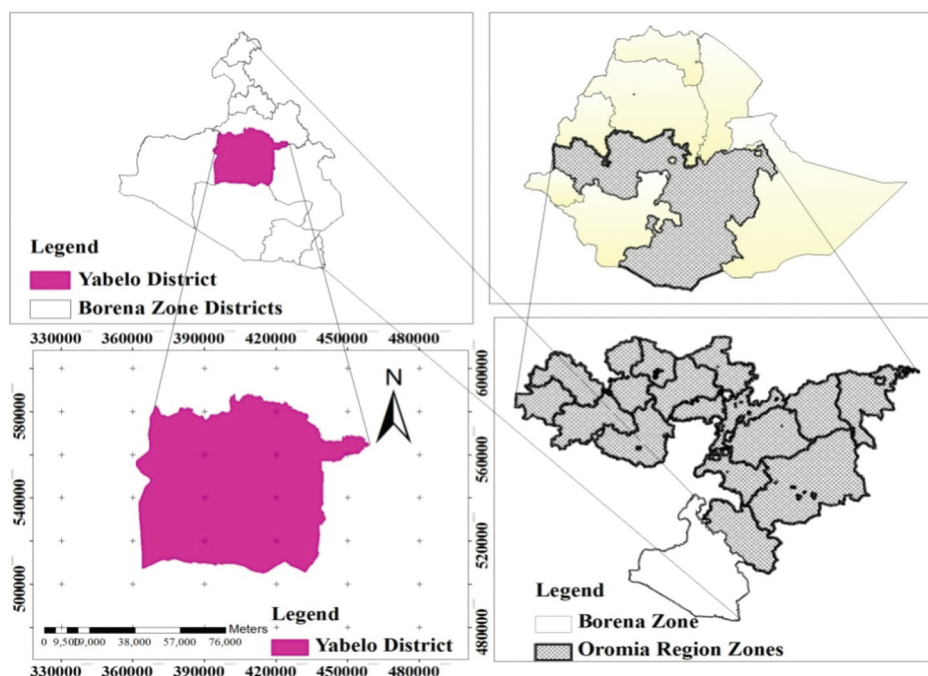


Table 1. The total number of sample households and population of the sample

Name of the kebeles	Total numbers of the household	Sample household
Dambala sadden	509	$(509 \times 180) / 1734 = 53$
Abunnu	514	$(514 \times 180) / 1734 = 53$
Cholkasa	711	$(711 \times 180) / 1734 = 74$
Total	1734	180

Source: Adapted from 2016 Yabello District Administration Office

the total income of the households. All sample households derive income from both Aforementioned livelihood options. However, the livelihoods of most sampled households have strong reliance on livestock rearing indicating that livestock rearing has lion share in total income of sampled household. The existing trends in pastoral livelihood shows reduction of livestock share to total income when compared to the past and role of the non-pastoral livelihood option is raising among which crop production takes significant share. Crop production, which were used to seen as disparaged activity (Birhanu & Beyene, 2015), is currently the second alternative income source to household income. This may be due to the fact that pastoralists' perception about crop production is changed and pastoralists are integrating crop production along with livestock rearing.

Also, non-pastoral non-farm activities (both high return and low return non-pastoral non-farm activities) contributed 27.51% to total household annual income. High return non-pastoral non-farm activities, which are relatively undertaken by small proportion of sample households (29%), take third rank contributing 21.3% to the total household annual income. This indicate that effectiveness of the activities are by far greater than the others which are relatively undertaken by large proportion of people. Livestock trade have momentous role to high return non-pastoral non-farm activities followed by renting house at the town and working by vehicles for transportation, which currently undertaken by younger people, respectively. Opening bars at local town have lower share relative to the other high return non-pastoral non-farm activities having 1.49% share to total income of the households. Key informants also confirmed that younger generation have tendency of undertaking urban-linked activities like trade and transportation. Motor cycle, which serves as alternative means of transportation to livestock (Equine animals) as well as source of income is seen positively by pastoralist communities of study area.

The results further indicated that low return non-pastoral non-farm activities contributed less to total income by contributing 6.21% to it. Income from petty trade like shopping in the village, sale of eggs and livestock product, by gathering it from the village, have large contribution to low return non-pastoral non-farm activities. Income from hand craft, remittance, wood and charcoal sale; and casual labour were less significant which contribute less than 1%. This may be because pastoralists have negative attitude towards activities like hand crafts metal work. Both household survey and key informant interview show that low return non-pastoral non-farm activities are mostly carried out by female-headed household, and even within the male-headed household, the activities belongs to the female. Idea from the key informants also confirmed that place where these low return activities undertaken is more appropriate to female than male by rising that male mostly spent their time outside the home. Furthermore, key informants noted that female have high capability to manage those activities just like reproductive activities, which are mostly done in and around the home. ¹ Lack of the control over the more productive households' resource and limited mobility far from the home like their male counterpart are the other reason that accelerate female tendency to these activities. Similarly finding by Nelson et al. (2016) also reported that, settlements offer women entree into trade (e.g. selling milk), and engagement in retail sales. In contrast, men consider many of the alternative

Table 2. Income share of different livelihood activities and their total income

Income source	(%)
Pastoral and dry land farming	72.49
Farm income	29
Income from livestock sale	40.08
Income from livestock product	3.41
Income from high return non- pastoral non- farm activities	21.30
livestock trade	10.25
Opening bars at local town	1.49
Renting house at the town	5.28
Income from vehicles for transportation	4.28
Income from low return non- pastoral non- farm activities	6.21
Income from petty trade like shopping	3.56
Income from hand craft activities	0.72
Income from remittance	0.61
Income from wood and charcoal sale	0.63
Income from casual labour	0.65

Source: Field survey, 2016

livelihoods available to them in and around settlements (e.g. petty trade, manual labour, service sector work) as women’s work and perceive it as a threat to their masculinity.

3.2. Perception of pastoral household of non pastoral activities

Perception refers to constructing an understanding of the social world from the data we get through our senses (Michener et al., 2004). Thus, perception refers to the process by which we form impressions of our environment. According to Walker and Avant (2005), perception utilizes sensory and cognitive processes to appreciate the world around us. It is a unique way of understanding phenomena by interpreting sensory information based on experience, processing information, and forming mental models.

Therefore in this study, perception is operationalized as an individual’s or group’s unique way of viewing a phenomenon (non-pastoral activities), incorporating memories and experiences in the process of understanding. Thus, it implies views of the household head towards non-pastoral livelihood options.

Perception is a personal manifestation of how one views the world which is colored by many factors like sociocultural elements and other individual traits. In this study different socioeconomic factors have been compared against the perception towards non-pastoral activities. The results in Table 3 indicate the association between perception and different variable with their respective statistical significance. Results show positive perception of younger group of population towards non-pastoral activities while mean age of those who respond, non-pastoral activity is not advisable is higher (52.65) implying the elder or aged household stick to pure pastoralism. There is statically significant mean age difference between different categories of perception at less than 1% level of significance.

Result also reveals positive perception among the household with larger family labor, lower livestock holding and situated relatively at closer distance from the nearest market with significant mean difference at different level of significance (Table 3).

Table 4 shows that 40% of respondents agreed on equal importance of crop cultivation with livestock rearing while 26.66% argued with its equal importance with livestock rearing. This can be seen as an indicator for recognition that dry land farming (crop production) is getting in Borana pastoral communities (Liao, 2014). The mean score of respondent is 3.2 with standard deviation of 1.18. Beside positive pattern seen towards crop cultivation there is opposition to the expansion of land for crop cultivation from aged people due to its competition with livestock over resources. One key informant stated the following quote to describe how the livestock are being threatened by the expansion of crop cultivation. *“Looniin badi hin jedhin ka abbaan oobruu qotu”*² which literally means that, when one starts cultivating crop, cattle will be lost at a time, thus no need to curse it. This implies that farming and livestock rearing are competitive by nature rather than having complementarities. Some of the studies share the aforementioned idea raising that crop cultivation is not as sustainable as livestock rearing in dry land area due to its longterm environmental cost as well as its vulnerability to drought than livestock rearing from aspect of mobility (Looloitai, 2014). De Haan et al. (2016) elucidated that, crop farmers increasingly invest in livestock, whereas pastoralists are taking up cropping because their herd sizes have fallen below the minimum to sustain their households. The symbiotic relationship between crop farmers and pastoralists therefore disappears.

Provision of the services like increment of infrastructures such as road, telecommunication, market centers, and schools by government in changing pastoralist livelihood changed pastoralist perception toward sedentary based livelihood options (Teshome & Bayissa, 2014). Reflection of focus group discussions is that farming has great importance as supplement to livestock rearing in its contribution to the livelihood of the community if properly managed. This can be through reducing livestock sale; by filling household consumption gap created during dry season when the livestock productivity decrease, although commonly used cereal crop are less nutritious than livestock’s product. Lastly, the crop residue is used as animal feed at the time of feed shortage. Even during the short rainy season, crops that fail to bear grain are used as animal feed in the form of hay³ Several studies made in pastoral areas support proper integration of crop-livestock production using both crop residue and livestock manure as an input for one another (Boru et al., 2015; Tilahun et al., 2017)

According to the result displayed in Tables 5, 42.8% of the respondents agreed that livestock trade and building house at the town would help to cope up with climate related risk with 40% neutral about the idea. On the other hand, 88.9% of respondents approved that undertaking non-pastoral non-farm activities reduce vulnerability to drought than natural resourcebased activities with 4.37

Table 3. Association between pastoralists’ perception toward non-pastoral livelihood option and socioeconomic factors

Variables	Pastoralist perception toward application of non-pastoral livelihood option			
	Advisable (N = 135)	Neutral (N = 28)	Not advisable (N = 17)	F-value
	Mean (SD)	Mean (SD)	Mean (SD)	
Age	43.85 (8.64)	51.96 (12.75)	52.65 (11.37)	12.74**
Family size	4.27 (0.81)	4.00 (0.85)	4.15 (0.54)	6.52 **
TLU	16.78 (12.28)	16.84 (13.29)	20.76 (16.29)	3.11 *
Distance from the nearest market	1.19 (0.87)	1.35 (0.68)	1.83 (1.00)	6.28**

*P ≤ 0.05, **P ≤ 0.01

Source: Field survey 2016.

Table 4. Cultivating crop is as important as livestock rearing in generating income

Categories	Percentage	Mean	SD	χ^2
Strongly agree	16.67	3.21	1.18	11.74*
Agree	23.33			
Neutral	33.89			
Disagree	16.67			
Strongly disagree	9.44			

*P ≤ 0.05

Source: Field survey 2016.

mean score and 0.72 standard deviation. There is also statistically significant difference between the categories. Pastoralist exposure to different drought risk has changed their perception to non-pastoral non-farm activities and the role of those activities in helping their livelihood during climate change shocks. Tolosa (2018) argued that pastoralists have decided to settle down and engage in crop production and non-pastoral activities and have diversified their source of income by integrating livestock rearing with crop production and non-farm activities, which require sedentarization either in rural or town setting. Stites and Akabwai (2012) also noted that in pastoral area there is a clear perception that more lucrative livelihoods opportunities exist in urban or peri-urban areas.

Borana pastoralists used to depend solely on livestock rearing to make living and their livelihood had strong tie with livestock rearing alone. This make them put less emphasis on the other livelihood option even regarding some as disgraceful activities. The study shows that positive pattern is seen on pastoralists' perception towards importance of alternative livelihood activities to their livelihood improvement. Accordingly, the majority (62.77%) of respondents support a statement, which says undertaking diverse activities is more beneficiary than doing single activity as well 62.23% of the respondents supported that shifting towards small trade helps in improving the livelihood of pastoral household (Table 6). The figure shows that most pastoral households have interest of participating in non-pastoral activities.

Table 5. Respondents' perception on effect of non-pastoral activities on climate related risk

Livestock trade and building house at the town preferable to cope with climate risk				
Categories	Percentage	Mean	SD	χ^2
Strongly agree	20.00	3.44	1.02	32.96**
Agree	22.78			
Neutral	40.00			
Disagree	16.11			
Strongly disagree	1.11			

Undertaking non-pastoral non-farm activities reduce vulnerability to drought than natural resource based one

Categories	Percentage	Mean	SD	χ^2
Strongly agree	50.00	4.37	0.72	17.30*
Agree	38.89			
Neutral	9.44			
Disagree	1.67			
Strongly disagree	0			

*P ≤ 0.05, **P ≤ 0.01

Source: Field survey 2016.

In the case of undertaking socially despised activities like blacksmithing and metal work still most of sample households are in disagreement with undertaking it, having 41.11% cumulative percentages for disagree and strongly disagree due to strong social rejection considering it as despised activities and work of some classes of the society (Table 7). According to results from the key informant’s interview, this idea mostly reflected in aged people who have strong respect for accustomed tradition and believe that life without livestock impossible in the area⁴ Contrary to that supporters of this idea are mostly poor household who are most likely to drop out of pastoralism. The culture of selecting kind of work is embedded with tradition of pastoral communities and Borana used to see some activities as disgraceful while pastoralism was sole livelihood option that had special place among pastoralist and later drought shocks brings less rewarding crop production (Birhanu & Beyene, 2015). The reflection from the result also reveals lasting effects of culture on the attitude of the pastoralist and many reject participations in such work even if they get an opportunity.

3.3. Households’ future plan to different livelihood activities

Table 8 shows.⁵ that 14.4% of the sampled household indicated intensive livestock rearing as future livelihood activity. Some respondent said that they did not want to live without livestock specially cattle. This group of people have relatively large stock size and oppose expansion of crop production due to their competition over pasture area. According to the local elder, livestock particularly cattle were closely tied with their daily life activity; their consumption habit and, wealth ranking were based on those animals even though currently incorporating another attribute in wealth ranking of individuals. Cattle is seen as sign of peace and every individual should stand when the cattle entering home tonight considering it as peace is entering home together with cattle showing strong respect they have for cattle.

Results also show that 28.3% and 26.7% of the household have plan to commercial (trade) activities and focus on crop cultivation, respectively. Focusing on the trading is mainly planned by household with high non-pastoral and non-farm activities. This result implies dynamism of pastoral systems along with changing pastoral environment, currently reoccurring drought and changing global climate which in turn is changing the perception of communities about pastoralism. On the other hand, the respondents indicated that migrating to town (8.9%) was their future plan for livelihood diversification aside pastoral farming. This indicates that Borana pastoralists are still lagging behind on urban-based investments. Although pastoralists’ link to urban is poor, pastoralist

Table 6. Respondents’ perceptions towards importance of non-pastoral nonfarm activities for people’s livelihood

Undertaking the mix of the activities is more appropriate than doing single activity				
Categories	Percentage	Mean	SD	χ²
Strongly agree	28.33	3.77	1.04	15.48*
Agree	34.44			
Neutral	24.44			
Disagree	11.11			
Strongly disagree	1.67			
Shifting towards small trade helps in improving live				
Strongly agree	20.56	3.69	0.95	21.81**
Agree	41.67			
Neutral	23.89			
Disagree	13.89			
Strongly disagree	0			

*P ≤ 0.05, **P ≤ 0.01

Source: Field survey 2016.

Table 7. Undertake socially disgraced activities

Categories	Percentage	Mean	SD	χ^2
Strongly agree	1.67	2.82	1.06	17.60**
Agree	31.67			
Neutral	25.56			
Disagree	29.44			
Strongly disagree	11.67			

**P ≤ 0.01

Source: Field survey 2016.

Table 8. Future plan for households across livelihood strategies

Household future adjustment	Percentage (%)
Intensifying livestock rearing	14.4
Focusing on crop cultivation	26.7
Shifting towards trade	28.3
Choosing to migrate to the local town	8.9
Undertaking the mix of activities	21.7

Source: Field survey, 2016

of study area decided to settle in more sedentralized manner rather than mobile pattern due to easy accessibility of different public services (Tolosa, 2018). The result reflected that despite their confined settlement in rural area still Borana pastoralists' exposure to the urban is low.

4. Conclusion and recommendations

Diverse livelihood activities in the Borana community, being driven by different factors, are showing increasing pattern and pastoralists' household attitudes toward those activities are changing. The traditional beliefs about some non-pastoral activities as despised, other than livestock rearing, are changing and the pastoralist's perception towards non-pastoral activities is showing positive pattern. Pastoralist perception towards non-pastoral activities like engagement in trade (of livestock or petty activities) is gaining positive pattern, which complement with environmental sustainability. Pastoralists' exposure to different challenges forced them to choose different livelihood options such as intensification of their former livelihood activity, shifting to trading and more mixed livelihood activities; calls for tailor-made policy and development practice which will be in line with their livelihood strategy choices. Properly managed dry land farming is seen as supplementary income source for the pastoralists. Therefore, area with low grass potential should be set for farming by supplementing it with excess livestock manure and multipurpose small scale irrigation schemes. Thus governing bodies and other development partner working in the community should encourage pastoralists to integrate livestock rearing with other non-pastoral livelihood diversification options in the ways that complement pastoralists' livelihood.

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Notes

1. Arero Wario, Qucu Arero and Kuse Liban
2. Gayo Malise
3. FGD1 and FGD3 in Cholkasa and Abbunu Kebele Respectively.

4. Kuse Liban and Doyo Dulacha.
5. Shoba Boru, Kana Doyo and Kuse Liban

Disclosure statement

Author(s) declare that there are no conflict of interests.

Ethics approval and consent to participate

There are ethical protocols that should be followed by the researchers. Consent of every household was taken into account before conducting the interview. This ensured that their participation in the study is not out of their own volition.

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