

## **Factors Influencing Smallholder Dairy Farmers Participation in Voluntary Compliance of Decent Work Practices: Case Study in Nakuru County Kenya**

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### **Abstract**

*Decent work concept is based on four pillars namely employment, employment rights, social dialogue, social security. The uptake of decent work practices in smallholder dairy farms is poorly understood. This paper explores the linkage between socioeconomic status of smallholder farmer and compliance to decent work standards. The study involved 123 farmers. Three index scales were constructed to measure decent work. These were based on a composite index based on the four pillars of social security, social dialogue, and employment rights. Ordinal logistic regression analysis revealed that there was a significant relationship between decent work level, breed and education. Therefore policies that would address inadequate genetic capacity of animals and ensure improved literacy levels for the general populace can enhance decent work interventions. For education this can be support of adult literacy institutions. But along with these interventions, a general awareness campaign should still be carried out.*

**Keywords:** socio economic characteristics, decent work, smallholder dairy farmers. Ordinal logistic model

### **1.0 Background Information**

#### **Introduction**

In recent years, the quality of work has become an issue of growing concern (ILO, 1999; Vijayalakshmy, 2005; Burchell et al., 2010). The significance of how workers are treated has gained added focus in growing internationalization of economic trade and the globalization (ILO, 2003). Conscious of these realities as well as the need to adapt labour practices to the new global environment, International Labour Organization sought out solutions that allow for the improvement of labour practices. This was done through the concept of decent work. The concept entails four main pillars namely employment rights, social security and social dialogue (ILO, 1999). Explicitly related to these four pillars are the following elements as criteria for quality employment, equal opportunity and treatment in employment, adequate earnings and productive work, decent hours, stability and security of work, Safe work environment, social benefits, combining work and family life (Anker *et al.*, 2002; Bescond *et al.*, 2003; Bonnet *et al.*, 2003; Ghai 2003). According to Lawrence et al., (2008) the four key components of decent work can be considered simultaneously otherwise the concept will not be applied in its broadest sense.

Decent work concept is treated as a key strategy in addressing poor labour issues along the entire continuum from informal to formal (ILO, 2002). It is identified as development objectives in itself, and as a means to promote growth, reduce poverty and promote better governance (ILO, 2002). The vision of decent work concept worldwide is to serve the impoverished majority, help lift them out of poverty, and make them full participants in their country's social and economic development. Decent work concept enables governmental to realize their targets, among them Millennium Development Goals (MacNauton and Frey, 2010). In recent years, several national and international initiatives have embraced this concept to promote labour practices. Many domesticate the concept to their own conditions.

During the last decades extensive labour market reforms have been undertaken in Kenya in an effort by policy makers to improve the performance of Kenyan labour markets. An aspect of these reforms has been ensuring that labour laws are in consonance to Decent work concept. These laws were set out through the employment Act (GOK, 2007a), labour Institutions Act (GOK, 2007b), Labour Relations Act (2007c), Occupational Safety and Health (GOK, 2007d), Work Injury Benefits Act (2007e).

Dairy in Kenya plays an important role in economic growth and employment. Estimates point to the involvement of close 1.8 million small scale farmers (Ouma et al, 2007). Farmers also account for most (87 %) of employment at the farm-level (Ouma *et al.*, 2007). Most of these are considered informal (FAO, 2011). Despite the role of dairy in job creation, little attention has focused on the relationship between farmers as employers and their employees in these small scale farms.

The passage into law of the employment act in Kenya, established laws based on the decent work concepts to provide guidance for jobs that were considered outside the scope of formal employment. Essentially, the laws were to lead to improved labour standards for all workers. By so doing contribute towards formalization of informal employment and achievement of decent work. Even with the presence of legal structures there is a lot of variation on the terms of employment especially on small dairy farms. There is therefore need to understand choices made by farmers regarding compliance to various labour regulatory codes. This insight is needed to design policy instruments to encourage a more widespread compliance. In spite of the increasing interest in non-compliance, research on its determinants is scarce, and most of what has been done deals with the factors affecting the size of the underground (unofficial, shadow, informal) economy as a whole, which do not necessarily coincide with those shaping evasion of labour regulations (Marshall, 2007). Further, Huneeus *et al* 2012 contends that other studies reduce job quality to a piecemeal one-dimensional analysis considering wages alone. This could hide important complementarities and make difficult the comparison between workers.

Since little has been done to assess factors that influence a farmer's compliance with employment standards, the study borrow heavily from adoption study. Current economic theory of adoption is based on the assumption that the potential adopter makes a choice based on the maximization of expected utility, subject to prices, policies, personal characteristics and natural resource assets. Compliance to labour law codes in smallholder dairy farms operations is seen as an individual producer's decision. A producer's utility from complying may be modeled as a function of the producer's characteristics, farm characteristics and attributes of the animal. The probability that a farmer will choose to comply with particular regulation is given by the probability that the utility of the alternative is greater than the utility that the producer would gain from any other given alternative. With the decision to comply or to not to comply, the producer is choosing the alternative that maximizes utility. However, this approach makes the assumption that farmers are a homogeneous group. This may not be the case, because farmers can be at different levels of compliance or uptake of decent work practices such as low, medium or high. Indeed, the role of the various driving forces at the farm level is crucial to understand and promote compliance various regulatory aspects since it is a complex innovation that requires a strategic or system change on the part of the farmer. Literature provides that socio economic status of the individual farmer influences decision making on a number of issues at farm level. Factors, such as, income from off-farm jobs, availability of capital, milk prices, price of land, farmer education and training and availability of family labour, influence a dairy farmers' decision on dairy operations (Chantalakhana, 1999). In this context the present study was undertaken to examine various farm and farmer characteristics that influence compliance to employment standard as established by the decent work concept and in consonance to existing labour laws. Additionally, this research seeks to provide guidance to policymakers and researchers, all of whom agree that change in our employment relationship is needed, but who lack certainty on how best to lead, implement, and manage the process of change. The lessons learned here can inform both local and national reform efforts.

## 2.0 Methodology

The study was carried out in Nakuru County, Kenya. A purposive and snowball sampling technique was employed in the selection of sampled farmers in the study area. In the first stage, seven locations were purposively selected based on their relevance in smallholder dairy farming. The second stage involved a snowball sampling resulting in a total of 123 smallholder dairy farmers reached. Having a farm worker dealing with dairy was a prerequisite for the study. Descriptive statistics was used to analyze the socio-economic features of the farmers while the ordinal logistic model was used to capture the degree of association between farm and farmers characteristic influencing compliance to labor standards governing the employment relationship.

To operationalize the model, the dependent variable (the Cumulative decent work Index (CDWI)) was constructed using four key Decent work pillars – Employment, employment rights, social security and social dialogue. Each indicator again had a number of sub-indicators. These correspond to employment contract, adequate wages, working hours, working days, provision of leave, social security in terms of health insurance and pension, being a membership to a union. Each sub indicator was assigned a quantitative rank of 1 or 0 based on the field survey. The total score for a respondent is obtained by summing up the score obtained on sub indicator. Depending upon the extent of compliance of improved technologies the respondents were categorized as follows:

- 1) Low adopters,
- 2) Medium adopters and
- 3) High adopters

The following independent variables were selected for the study:

**Table 1: Description of Variables and their Hypothesized Signs**

Variable	Description
Age	Age of farmer
Sizeland	Farm area (acres)
[genFar=1.00]	Gender farmer (1= Male, 2=Female)
[A9b=1.00]	Breed of animal ( 1= exotic, 2 = cross or indiginous)
[iwincome=1.00]	Income from livestock (1=<5000, 2=5001-10000, 3=10001-30000, 4=>30000)
[hgrdelc=1.00]	Level of education (1=illiterate, 2= Primary, 3= Secondary, 4= University, 5= Vocational)
[wymsourc1=1.00]	Source of income (1=farming , 2= farming and other)
[forinf=1.00]	Milk selling channel (I=formal, 2=informal)

Given the dependent variable ( was of ordinal categorical nature derived through summing up all sub indicators of decent work pillars, an ordered logit model was employed to estimate the influence of independent variables (farm socio-economic and farm factors) on decent work practices categories. The ordered logit model is built around a latent regression in the same manner as the binomial logit model. Let  $y^* = \beta'x + \epsilon_i$ , where  $y^*$  is the underlying latent variable that indexes the level of compliance of decent work practices making,  $x$  is a vector of parameters to be estimated and  $\epsilon$  is the stochastic error term. The latent variable exhibits itself in ordinal categories, which could be coded as 0, 1, 2, 3, ..., j. The response of category j is thus observed when the underlying continuous response falls in the jth interval as:

$$\begin{aligned}
 y &= 0 \text{ if } y^* \leq 0 \\
 &= 1 \text{ if } 0 > y^* \leq \partial_1 \\
 &= 2 \text{ if } \partial_1 > y^* \leq \partial_2 \\
 &= 3 \text{ if } \partial_2 > y^* \leq \partial_3 \\
 &= j \text{ if } \partial_{j-1} \leq y^*
 \end{aligned}$$

Which is a form of censoring, with the  $\partial$ 's being unknown parameters to be estimated with  $\beta$  (Green 2000).

### 3.0 Results and Discussion

#### Characteristic of Farmers

Results on table 2 indicate that the most respondents (65.9%) were males (table 1). These findings are not in consonance with a number of literatures which tout that women are the predominant farmers. It may be indicative of the fact that men may also predominate in enterprises that have reliable income. The average age of the household head was 53 with most farmers (56.1%) falling in the age bracket 36-55 years. Majority (82.9%) of the farmers were married with most 56.1 having attained secondary level of education (table 1). Literacy level of the farmers among the respondents could be considered fair. Farmers would be able to have adequate understanding of employment laws if exposed sufficiently. Quite a number of farmers (59.3%) relied on farming as the principal source of income. Apart from farming, 40.65% of the farmers also got their income from other sources. Over 76% of the farm owners were obtaining income in the range 10001-30000, 24% (5001-10000), 15% (0-5000) and only 8% (over 30000) on a monthly basis. These figures related to income obtained after all expenses that include the labour cost were taken into consideration.

**Table 2: Characteristics of Farms in the Case Study**

Characteristic	Total	
	Number	Percentage
Sex		
Male	81	65.9
Female	42	34.1
Age of household head		
<18	0	0
19-35	7	5.7
36-55	69	56.1
>56	47	38.2
Mean	123	100
Marital status		
Single	9	7.3
Married	102	82.9
Widowed	12	9.8
Education		
Illiterate	4	3.3
Primary	34	27.6
Secondary	69	56.1
University	7	5.7
Vocational	9	7.3
Farm as principal occupation		
Yes	73	59.35
No	50	40.65
Income from dairy		
<5000	15	12.2
5001-10000	24	19.5
10001-30000	76	61.8
>30000	8	6.5

Source: Survey, 2012-2013

#### Characteristic of Farms

Table 3 shows the characteristics of the small farms surveyed. The average land size was 3.9 acres with sixty three per cent of farms being less than 5 acres. Most farms (68.3%), kept at least three cows or less. Slightly over fifty eight percent of the farms kept crosses as opposed to exotic. Seventy eight per cent of the farms had one employee, 17.1 % had 2 and finally 3.4% representing 3 and 4 workers.

**Table 3: Characteristics of Farms in the Case Study**

Characteristic	Number	Percentage
Land ownership		
≤5 acres	78	63.4
>5 acres	45	36.6
Mean land size	3.9	
Number of dairy animals owned		
≤3	84	68.3
4 ≤ x ≤ 6	34	27.7
7 ≤	5	4
Herd composition by farm		
Exotic	52	42.3
Cross	71	58.2
Indigenous		
Workers on payroll		
1	96	78
2	21	17.7
3	3	2.4
4	3	2.4

Source: Survey, 2012-2013

#### **Extent of Compliance of the Decent work Practices among Farmers**

Statistical data regarding the extent of uptake of decent work practices by the dairy farmers have been presented in table 4. Majority of the respondent's i.e.72 (58.5 per cent) belonged to the medium compliance category. Thirty two farmers (26 per cent) and 19 (15.4 per cent) were found in the low and high compliance categories, respectively.

**Table 4: Extent of Compliance of Improved Dairy Husbandry Practices by the Dairy Farmers (N=123)**

Adopters category	No	%
Low	32	26
Medium	72	58.5
High	19	15.4

Source: Survey, 2012-2013

#### **Extent of Compliance of different Practices of Decent Work**

The extent of compliance of different practices of decent work was also analyzed. The relative importance of all the practices was highlighted by ranking them on the basis of their frequencies and data have been presented in Table 5. The practice to complied with included days worked, leave, and hours worked. Lowest compliance was seen in aspects that relate to social security and dialogue

**Table 5: Practice Wise Extent of Uptake of Practices by the Dairy Farmers (N=123)**

Practice	MPS	Rank
Contract	13	5
Wages	32.5	4
Days worked	69.9	1
Hours worked	60.2	3
Leave	65.9	2
Contributed to a pension scheme	0	7
Contributed to hospital insurance	7.3	6
Allowed membership of a union	0	7

Source: Survey, 2012-2013

### Factors Affecting tier Level of Decent Work Practices

An ordinal logistic model (OLM) was fitted to the data to test the research hypothesis regarding the relationship between levels of voluntary decent work index and farmers social economic status. The ordinal regression analysis was carried out by the SPSS version 17 (IBM Institute Inc., 1999) in the Windows 2007 environment. The results of the OLM, which analyzed the effects of major personal, socioeconomic characteristics of the farmers on the rate of voluntary compliance to labour standards are presented in table 6 below. Farmer's personal characteristics which were thought to influence compliance to labour standards included age, gender, education level, These factors were analyzed by hypothesizing that there was no significant relationship in compliance to labour standards and socio-economic characteristics. The model confirms systematic effects on tier level of decent work practices is related to the animal breed and education level. In relation to animal breed the *B* coefficient is .985. This indicates that farmers with exotic animals were 2.78 times more likely to take up higher decent work practices than farmers with crosses or indigenous animals. This implies that inadequacy of genetic capacity (genetic differences) may indirectly play a role in farmers' uptake of higher tier decent work practices. There was also a strong association between level of education and decent work index. This was particularly true for farmers who were either illiterate or had not proceeded beyond secondary level of education. The significant positive coefficient for farmers who had not received formal education and primary level of education was 3.947 and 2.26 respectively. Illiterate farmers were therefore 52 times more likely to be taking up higher decent work practices than those with tertiary level of education. Similarly, those with primary level of education were 9.73 times more likely than farmers who had above primary level of education. This result indicates that illiterate dairy owners and those with primary level of education do not implement most decent work labour practices. It also shows that those who have higher education may have already complied with decent work practices.

**Table 6: Results of Estimated Ordinal Regression Model on Relationship between Farmer and Farm Attributes and Extent of Compliance to Labour Practices by Smallholder Dairy Farmers**

Results of estimated ordinal regression		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Threshold	[comp1 = 1.00]	-.646	1.910	.115	1	.735	-4.389	3.097
	[comp1 = 2.00]	3.601	1.978	3.314	1	.069	-.276	7.477
Location	Hmdcinco	-.140	.135	1.081	1	.299	-.405	.124
	Age	.010	.019	.307	1	.580	-.026	.047
	Sizeland	.117	.103	1.288	1	.257	-.085	.319
	[genFar=1.00]	.171	.482	.126	1	.722	-.774	1.117
	[genFar=2.00]	0 <sup>a</sup>	.	.	0	.	.	.
	[A9b=1.00]*	.985	.581	2.873	1	.090	-.154	2.124
	[A9b=2.00]	0 <sup>a</sup>	.	.	0	.	.	.
	[iwincome=1.00]	-2.229	1.395	2.551	1	.110	-4.963	.506
	[iwincome=2.00]	-1.868	1.275	2.148	1	.143	-4.367	.630
	[iwincome=3.00]	-1.614	1.240	1.693	1	.193	-4.045	.817
	[iwincome=4.00]	0 <sup>a</sup>	.	.	0	.	.	.
	[hgrdelc=1.00]**	3.947	1.818	4.714	1	.030	.384	7.510
	[hgrdelc=2.00]	2.689	1.143	5.534	1	.019	.449	4.930
	[hgrdelc=3.00]	.675	.733	.846	1	.358	-.763	2.112
	[hgrdelc=4.00]	.718	1.070	.451	1	.502	-1.378	2.814
	[hgrdelc=5.00]	0 <sup>a</sup>	.	.	0	.	.	.
	[wymsourc1=1.00]	-.040	.480	.007	1	.934	-.981	.901
	[wymsourc1=2.00]	0 <sup>a</sup>	.	.	0	.	.	.
	[forinf=1.00]	.165	.527	.098	1	.754	-.868	1.198
	[forinf=2.00]	0 <sup>a</sup>	.	.	0	.	.	.

a. This parameter is set to zero because it is redundant.  
\*Significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%.

### 4. Conclusion

The starting point for this paper was the issue of decent work concept and its ratification as a labour standard. The study then used socio economic farm factor as variables to explain how farmers have complied. The implicit assumption underlying this practice is of course that farmers may not wholesomely comply but do so in stages.

To operationalise this, the study used an ordinal logistic model. The analysis suggested the major factor that influence farmers level of compliance relates to the breed of the animal and literacy level. Therefore policies that would address inadequate genetic capacity of animals and ensure literacy levels for the general populace improves can enhance decent work interventions. For education this can be support of adult literacy institutions, or a general awareness campaign may be need to supplement the above effort because of the general unsatisfactory compliance across board. This will strengthen capacity that may ensure integration into decent work practices. Further theoretical and empirical research is needed to develop a deeper understanding of the detailed determinants of the compliance decision.

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