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# Gendered Access and Control over Quality Declared Seeds (QDS) Resources among Rice Producers in Kilombero District, Morogoro, Tanzania

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## Abstract

*Quality Declared Seed for increased agricultural productivity is pertinent to farmers. This study assessed the gendered access to and control over QDS resources among rice producers. A cross sectional research design was used, whereby a questionnaire was administered to 218 rice farmers in Kilombero District. Focus Group Discussions and Key Informant interviews were conducted to complement and allow triangulation of data. Descriptive statistics were analysed using SPSS, while content analysis was used to analyse qualitative data. Specifically, SPSS computer software was used to analyse descriptive statistics such as Tab. The results show that access to credit was very low among farmers in the area even though women (45%) were found to have more access to credit than has been the case with men (13%). On the other hand, men were found to have more access to inputs (22%) and agricultural training (29%) than was the case with women. Women in the study area had access to land, but lacked control over it. Cultural barriers strongly affect and influence ownership of resources including land for rice Quality declared seed production among women farmers. .. It is concluded that women get less benefits in rice QDS production due to poor access to and control of productive resources. There is a need of removing all cultural barriers by creating awareness on equitable access and proper control of productive resources among both men and women using gender sensitive programs in collaboration with relevant government machinery.*

**Keywords:** Gender, land access, control resources, quality declared seeds.

## 1. Introduction

The Tanzanian government is determined to improve agricultural productivity as a source of raw material for industries and to attain sustainable development.

The National Agricultural Policy of 2013 considers gender as an important crosscutting issue in improving agricultural production (Mnimbo, 2018). Gender refers to the social constructed relationship and responsibilities between women and men (see Madaha, 2012, 2018). An important element for improving agricultural productivity is increased farmer access to improved technologies. Tanzanian women constitute the majority (over 90.4%) of agricultural labour force producing about 70 percent of the country's food requirements (FAO, 2015). However, most farming and livestock keeping activities have been socially assigned to women. Consequently, women face many challenges including lack of credit, improved seeds, pesticides, and fertilizers. Women are further constrained by limited educational background, poor networks, and mobility restrictions. The capacity of women farmers to employ improved technology and investment depends on their access to and control over productive resources. If incomes of women are increased, they may have more access to resources, which can help them invest in their children's education, health care, and nutrition (Sikira and Kashaigili, 2016). Both men and women contribute significantly to agricultural production yet, women's access to and control over these agricultural productive resources differ (Thabit 2014). The term access to resources means that both women and men are able to use and benefit from specific resources (material, financial, human, social, and political). Control over resources means that both men and women have access to a resource and can make decisions on the use of those resources. For example, control over land means that women can access land (use it), own land (can be the legal title-holders), and make decisions about whether to sell or rent the land.

An important productive input, among others includes Quality Declared Seeds (QDS): QDS refers to seeds subjected to a form of quality assurance that was created to reduce the burden of rigorous conventional seed certification, while retaining the basic characteristics of external quality assurance. This was meant to increase access to quality seed for smallholder farmers. Smallholder farmers refer to people who provide labour, management and own/control small landholding they farm (Assuming-Brepong et al., 2007). QDS are produced by small-scale farmers who are trained by Tanzania Official Seed Certification Institute (TOSCI) under the supervision of Seed Inspectors working for Local Government Authorities (LGAs) (TOAM, 2015). This kind of production needs many administrative procedures whereby the farmer has to be registered at TOSCI. However, studies focusing on gendered access to and control over QDS resources especially within the Tanzanian context are rare. The existing studies have focused on access to and

control over land (Barume, 2014; Loserian and Jeckoniah 2018), and gendered access and control over land and water resources (Sikira and Kashaigili, 2016). Other recent studies focus on agricultural productivity (Doss, 2018), rice yield (Kulyakwave<sup>1</sup> Shiwei<sup>1</sup>, and Yu<sup>1</sup> 2019), adoption of recommended rice varieties (Mligo and Msuya, 2015), and agricultural land use planning (Massawe et al., 2020). However, none of the studies has focused on gendered QDS utilization and production. Gender difference arising from socially constructed relationship between men and women, affects the distribution of agricultural resources and cause many disparities in the outcomes of development (Mnimbo, 2018)

Further, women face several challenges, most importantly cultural barrier restrictions in accessing land compared to men. Women control land that is often of poorer quality within the secure tenure (Sikira and Kashaigili, 2016). Similar observation is made by Mehra and Rojas (2008) who reveal that women were able to access only one per cent of credit in the agricultural sector because of lack of land as collateral. Equally, in cases where rice QDS equipment suitable for women rice QDS production are available, the majority of them are either unaware or do not have enough funds to purchase them. They therefore continue to use old methods such as f hand hoes, which decrease their working speed and productivity (World Bank, 2008).

Other challenges facing women farmers include the reason that their work in the agricultural sector is largely ignored (FAO, 2015), application of inappropriate technologies, and discriminatory social-cultural practices and beliefs (URT, 2013). Due to these facts, progress in the agricultural sector is hindered. Scholars such as Massawe et. al., (2020), Jeckoniah (2019), Sikira and Kashaigili (2016), Thabit (2014), have studied gender access to and control over agricultural resources and gender analysis in rice production. However, the studies are predominantly quantitative. Besides, little has been documented on gendered access to and control over resources among rice QDS beneficiaries in Kilombero District. Thus, this study assessed gendered access to and control over rice QDS resources among rice producers so as to highlight areas for boosting QDS production among smallholder farmers in Kilombero District.

This study was guided by Socialist feminism informs this article. The theory recognizes oppression of women within multiple identities such as race, sexuality, ethnicity, gender, and nationality. That is, socialist feminism recognizes that gender oppression is context specific. In this regard, socialist feminism

synthesizes women's oppression by capitalism and patriarchy. It calls for inclusive movements by the oppressed women such as working-class women and rural peasants in collaboration with interested men to transform power relations in favour of a more just society. The GAD strategy is a strand of socialist feminist theory that has become a buzzword in the Global South including Tanzania (Moser, 1993; Parpart et al., 2000; Kabeer 2003; Brenner, 2014; Madaha, 2018). Informed by socialist feminism, this study explored gender roles, responsibilities, access to and control over resources, and opportunities, as well as hidden power structures that govern the relationships between them. Gender relations in most societies tend to influence access of males and females to critical resources necessary for their development. However, the elements are also important since gender relations in rice QDS production consider gender as an important aspect that can hinder development (UNDP, 2010). Therefore, for the rice QDS production to be achieved among smallholder farmers it is very important to integrate gender at all levels. As such, GAD, as a strand of socialist feminist theory, is in a position to examine the existing gender inequalities and opportunities in the distribution of resources, responsibilities, and power across rice QDS production in Kilombero District. According to World Bank (2012), gender inequality is the difference between men and women in terms of opportunities or unequal treatment or perceived differences based solely on issues of sex.

## **2.0 Methodology**

This study was conducted in Kisawasawa, Mang'ula, and Nkula Wards in Kilombero District, Tanzania. Kilombero district was chosen because (i) The district has farmers registered for rice QDS production (TOSCI, 2018) and (ii) The district is one of major rice production and supply centres (Mligo and Msuya, 2015). The population for this study consisted of all rice farmers (also referred to as rice producers) in Kilombero District Council with some access to QDS. The study employed cross-sectional research design whereby data were collected at a single point of time.

The unit of analysis included individual farmers who produce and utilize QDS. A representative sample was drawn from all farmers who produce and utilize QDS. The sample size was determined using Yamane (1967). Random sampling procedure was used to select a representative sample of rice producers. A sample of 389 smallholder rice farmers was randomly chosen. To ensure that the number of sampled households of smallholder farmers in a particular village

is proportional to its total number of households, a proportionate random sampling was applied. However, a sample of 218 was available during the survey for interview.

Data were collected using qualitative and quantitative methods. A semi-structured interview guide was employed to collect qualitative and some descriptive statistics. A semi-structured interview comprising closed and open-ended questions was designed to solicit information from the respondents. Harvard Analytical Framework (HAF) was used to guide the collection of information related to gendered access and control over resources in QDS production.

Data entry and cleaning were done after data collection. Quantitative data were analysed using Statistical Product and Service Solutions (SPSS) version 20. Specifically, SPSS was used to generate descriptive statistics including percentages. Qualitative data were analysed using content analysis.

### **3.0 Results and Discussion**

The demographic variables used in this study include age and education level. Results in Table 1 show that the maximum and minimum ages of the respondents were 61 and 18 years respectively. A large proportion (68.8%) of the respondents fell within the age groups 25-34, 35-44, and 45-54 years, meaning that, the majority of the respondents were within the economically active age category. One of the explanations of the findings is that the majority of rice producers are young people. The results also show that 51.4 percent of the respondents were males while 48.6 percent were females. This suggests dominance of males in the rice QDS farm sector.

As for the educational level, the majority (99.5%) of the respondents had qualifications ranging from primary education to college/tertiary levels, while only 5.0 percent of the respondent had no formal education. Education level is used to measure the ability of a person to utilize the available information to increase production and to influence major decisions made in the household and in farm management (Thabit, 2014).

**Table 1: Social-demographic characteristics**

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Age of respondents</b>		
18-24	21	9.6
25-34	44	20.2
35-44	61	28.0
45-54	45	20.6
55-60	34	15.6
61 and above	13	6.0
<b>Sex of respondents</b>		
Male	112	51.4
Female	106	48.6
<b>Education level of respondent</b>		
No formal education	11	5.0
Primary education	170	78.0
Secondary education	34	15.6
College education	2	0.9
Graduate and above	1	0.5
<b>Marital status</b>		
Married	157	72.0
Single	32	14.7
Divorced	2	0.9
Widow/Widower	12	5.5
Separated	10	4.6
Cohabit	5	2.3

A literate society is better in understanding and competent in performing different activities including rice QDS production. Thus, education level is one of the basic measures, which can be used to decide the status of the society. Low level of education denotes powerlessness in social and economic spheres of life. Lack of power is reflected in their less control over their own income, and lack of bargaining power in selling their own produce and labour (Jeckoniah et al., 2012).

Lack of or having little education makes it difficult for women to gain access to and to use some of the resources such as land, improved seeds, credit facilities, and farming inputs including fertilizers (Madaha, 2012, 2018). Lack of or having little education also prevents women from adopting new technologies as readily as men do (Kulyakwave1 et al., 2019; Fasih, 2015). Equally, women have inadequate skills and knowledge because of discriminatory access to the productive resources (Ellis, 2000). Similar findings are reported by Kulyakwave1 et al. (2019) who pointed out that adequate education could help farmers in technology acceptance and accessing extension services.

The survey results indicated further that majority (72%) of the respondents were married, while less than one-third (28%) were divorced, single, widows/widowers, separated/divorced, and cohabiting. One explanation of the study is that the society is matrimonially stable. A study by Kulyakwave1 et al. (2019) has revealed that marital status of farmers has significant influence on rice yields. The findings also imply that married couples are more experienced and are capable of sharing knowledge and capital to influence yields. These findings are consistent with the findings in some past quantitative studies reported by other scholars (see Otekhile, 2019; Mwatawala, 2016; Ogunmefun, 2015; Mango et al. 2018; Ngailo et al., 2016). However, the article supports the thesis by Kulyakwave1 et al. (2019) that, many household members could contribute more to the households' welfare if all are engaged to rice QDS production.

Slightly more than one-third (34.9%) rented land, 31.2 percent bought their farm, and 19.7 percent inherited their farms. Another segment indicates that 14.2 percent borrowed land from their families. Families owning land have a wider chance of practicing crops diversifications and could lease land to other families. In return, the received money could help to cover for some farming operations such as weeding, purchase of fertilizer and improved seed and irrigation.

The distribution of the farm sizes showed that 26.2 percent had farm size ranging from 0.1-1.9 acres, 48.6, 15.6, and 6.4 percent had farm sizes ranging from 2.0-3.9, 4.0-5.9 and 6.0-10.9 acres respectively. Only 3.2 percent of the respondents had farm size ranging from of 11.0 acres and above. The findings indicate further those farmers own farm size less than 11 acres. Farm size in this case is the total area of the cultivated land measured in units such as an acre. According to Sikira

and Kashaigili (2016), there is a positive relationship between farm size and an increase in food production. A similar observation is reflected in this study. The larger the farm size the higher the expected level of food production. It is also expected that farmers with larger farmland would cultivate rice QDS since QDS requires enough land for isolation. That is, women can only engage in QDS production if they own a relatively large plot of land.

The findings reveal some key challenges in the ownership of farms. For instance, 33.5 percent of the respondents cultivate rice in the farms owned by their parents. The majority of the parents (i.e. 82%) were men. Further, 25.5 percent of the respondents cultivate rice in the farms owned by husbands. Given the patriarchal culture in the district, women can easily loose access to such farms. Sadly, only 7.8 percent cultivate rice in farms owned by wives. Farms, which are jointly owned, by husbands and wives were only 2.3 percent. This is very small proportion. The disturbing results indicate that about 30.9 percent of the respondents cultivated farms owned by nonfamily members. One explanation of the finding is that such peasants are vulnerable because they can end up losing such access.

Again, women are disproportionately affected because 76 percent of such farms were owned by men. Overall, the results imply that men have dominance over women in farm ownership. Meaning that, there is a need for women to be assisted in the ownership of farm. Farm ownership can serve as collateral for accessing credit. The findings are in line with findings in a study by Sikira and Kashaigili (2016), who revealed that, lack of control over land, endangers women's ability of improving their livelihood. However, the study did not focus on QDS; instead, it focused on gendered access and control over land and water Resources in the Southern Agricultural Growth Corridor. Overall, the constraints to land ownership also affect rice QDS farmers, as they cannot use their land to access loan from financial institutions. A salient finding of the study is that access to QDS is not sufficient in absence of farm ownership. Further, for QDS production to be efficient, and effective, there is a need of addressing gender inequalities among rice producing communities.

Table 2 indicates that women had more access to land (22%) than men (16.1%). Further, although access to credit was very low among farmers in the area, women (45%) had more access to credit than men (13%) did. On the other hand,

men had more access to inputs (22%) and agriculture training (29%) than women did (17.9% and 16.9%).

**Table 2: Access to QDS productive resources**

Gender Variables	Men		Women		Men & Women		None	
	No.	%	No.	%	No.	%	No.	%
Access to land	35	16.055	48	22.0183	111	50.9174	24	11.0092
Access to inputs (i.e. QDS)	49	22.4771	39	17.8899	83	38.0734	47	21.5596
Access to credit	13	5.9633	45	20.6422	75	34.4037	62	28.4404
Access to agricultural training	64	29.3578	37	16.9725	67	30.7339	51	23.3945
Access to extension services	65	29.8165	36	16.5138	77	35.3211	40	18.3486
Access to technology	58	26.6055	31	14.2202	65	29.8165	64	29.3578
Access to hand hoe	40	18.3486	48	22.0183	108	49.5413	22	10.0917
Access to Ox plough	43	19.7248	27	12.3853	81	37.156	67	30.7339
Access to backpack sprayer	69	31.6514	38	17.4312	77	35.3211	34	15.5963
Access to bicycle	38	17.4312	36	16.5138	106	48.6239	38	17.4312
Access to motorcycle	56	25.6881	31	14.2202	71	32.5688	60	27.5229
Access to vehicle	45	20.6422	27	12.3853	64	29.3578	82	37.6147
Access to tractor	67	30.7339	36	16.5138	80	36.6972	35	16.055
Access to bank account	34	15.5963	23	10.5505	70	32.1101	91	41.7431

**Key:** No. number of the farmers

The fundamental point is that input access is important in rice QDS production because it ensures increased production. The finding implies that women with less access to input can experience reduced productivity per acre as compared to men with access.

These findings show that agricultural productivity is decreased if women have less access to farm inputs. The finding is consistent with the findings in a study by Doss (2018) whose study had a similar conclusion. According to Umuhuza

(2012), the capacity of an individual to engage in rice QDS production normally depends on access to the productive resources. The findings from FGD showed that women require the enabling environment to make sure that they have access and control over resources and utilization of QDS in order to increase production. , The findings are in contrast with those reported in a study by Akter et al. (2016) who revealed that in some South-East Asian countries, there is no evidence of a gender gap in terms of access to and ownership of resources.

In terms of access to credit, women enjoyed better access to credit (20.6%) than the men (6.0%) did. As for credit, men had more control (26.6%) than women (12.8%) did. The findings are consistent with the findings in a study by Seleman (2017) who found that many Government initiatives attempt to increase access to credit but they ignore gender empowerment. A useful initiative would be the one that enables women to own collateral.

In terms of bank accounts, men also dominate in access (15.6%) and in control (23.4%) over bank accounts. Key informant interviews revealed that women in the society are not given much opportunity to control over finances within their family. One of the key informants summarized the views captured in other key informant interviews by saying

*"I do not ask my husband for money for agriculture. I know that he will not provide me with such money. In the beginning of the farming season, I normally go and borrow money from our community bank known as Village Community Bank (VICOBA) group for land preparation, harrowing, planting, weeding and harvest. I also buy inputs such as improved seeds, fertilizers, herbicides and pesticide etc". (A female participant, QDS producer at Nkula village, Kilombero District, Morogoro 23/10/2019)*

The findings are consistent with the findings reported from FGDs, which indicated that women hardly make decisions on finances within their households. Some women who attempted to inquire on financial resources from their partners became victims of Gender Based Violence. One explanation of the finding is that women lack control of financial resources in such patriarchal households. Instead, they rely on external informal sources such as VICOBA to meet some of their financial needs. They do so to avoid quarrelling with their partners. The findings are similar to the findings in other studies (see Fasih, 2015; Thabit, 2014). Fasih (2015) reports that women depend on own means to get things

done during the agricultural production season. Similarly, Thabit (2014) is of the opinion that women have more difficulties than is the case with men in gaining access to resources such as land, credit, and productivity enhancing inputs such as QDS and extension services. This trend can be attributed to the reality that, QDS production experience challenges that affect overall agricultural production. That is, for QDS challenges to be addressed, the government, and other development agencies need to employ a holistic approach that addresses all challenges in the agricultural sector.

In the same vein, the patriarchal culture allows men (see Table 3) to have more control over the land (41.0%) than it does with the women (18.8%). The consensus across FGDS was in line with the findings. The findings are consistent with the findings in a study by Quisumbing and Pandolfelli (2010) who revealed that men are given preference over women in controlling land. However, the study by Quisumbing and Pandolfelli was conducted in a different context. A unique contribution of this study is the identification of a number of reasons that block women from inheriting land in Kilombero District. First, there is a belief that land owned by a woman may be transferred to another man, if the husband dies. Second, the wife who divorces her husband may transfer land ownership to another man who marries her. The findings imply that interested women have a less chance of producing rice QDS because of gender-based discrimination. Women need to own an additional farm for producing QDS. That is, rice QDS need to be produced within an isolation distance of 4 metres away from the surrounding farms. This is done to avoid cross-pollination.

**Table 3: Control over productive resources**

Gender Variables	Men		Women		Men & Women		None	
	No.	%	No.	%	No.	%	No.	%
Control of land	89	40.8257	41	18.8073	67	30.7339	21	9.63303
Control of inputs	77	35.3211	35	16.055	70	32.1101	36	16.5138
Control of credit	58	26.6055	28	12.844	41	18.8073	91	41.7431
Control of agricultural training	72	33.0275	35	16.055	48	22.0183	63	28.8991
Control of extension services	64	29.3578	33	15.1376	58	26.6055	63	28.8991
Control of technology	56	25.6881	28	12.844	53	24.3119	81	37.156

Control of hand hoe	68	31.1927	49	22.4771	89	40.8257	12	5.50459
Control of Ox plough	46	21.1009	16	7.33945	15	6.88073	141	64.6789
Control of backpack sprayer	78	35.7798	23	10.5505	47	21.5596	70	32.1101
Control of bicycle	82	37.6147	28	12.844	61	27.9817	47	21.5596
Control of motorcycle	54	24.7706	15	6.88073	23	10.5505	126	57.7982
Control of vehicle	37	16.9725	13	5.9633	21	9.63303	147	67.4312
Control of tractor	40	18.3486	15	6.88073	19	8.7156	144	66.055
Control of bank account	51	23.3945	19	8.7156	34	15.5963	114	52.2936

**Key:** No. number of the farmers

The findings are in line with what was reported during key informant interviews. One female key informant- summarizing the views of other key informants- by remarking that women in the society are not given the opportunity of controlling land within their family; this is what she had to say,

*"I cannot produce rice QDS. QDS production requires large land area. It is extremely difficult for women to own land. Besides, I cannot take land from my neighbours to grow QDS (A female Key informant, at Kisawasawa village, Kilombero district, Morogoro 20/10/2019.)"*

All FGDs arrived at a similar conclusion. The statement and the FGDs indicate how some women experience socially imposed barriers to the production of rice QDS because of lack of land. One explanation is that land is an important asset for humans' survival. It is a major source of income and livelihoods for most rural people as it is for urban dwellers. The finding resonates with the findings in past research conducted elsewhere (Barume, 2014; Loserian and Jeckoniah, 2018). Given its importance, access to and availability of land resources is critical in ensuring real and long-lasting improvements in social, economic, and political well-being. The ownership and utilization of land as a productive resource for rice QDS production and as an important asset directly define wellbeing of farmers in the community. Table 3 reveals that men have more control over inputs (35%) than is the case with women (16.1%).

Agricultural training, extension services, and technology can play a crucial role in boosting production, and utilization of QDS. Nevertheless, gender mainstreaming has to be incorporated to ensure fair access to such resources

by all sexes. Overall, the findings of the study indicate that a higher percentage (29.4%) of men have access to agricultural training compared to women (17.0%). A similar trend is observed for access to extension services and access to, and control over technology (see Table 2). Some related studies have shown a similar trend (see Simiyu and Foeken, 2014, Quisumbing et al., 2014; Lamontagne-Godwin et al., 2017; and Mudege et al., 2017). According to Mudege et al., (2017), women are often at a disadvantage position concerning accessing agricultural training, extension services, and modern technology.

Agricultural extension services are meant to assist farmers adopt enhanced practices leading to increasing production and ensuing well-being. It has been generally accepted that extension services are more available to male than to female farmers. In addition, in Kilombero there were NGOs (e.g. USAID-Feed the Future) and Government Institutions such as TOSCI, which helped farmers with knowledge and extension service. The institutions encouraged women to be included in such interventions to allow them access aid such as seed for QDS training and extension service.

As FAO (2011) observes, service providers tend to approach men more often than they do for women because of the general misperception that women do not farm. It is evident that women do not have the powers to decide at the household level, men have to decide on their behalf that is why men have the powers to decide to attend trainings on behalf of women. In addition, there are some expectations that there would be a “trickle down” effect from men as heads of households to the rest of the household members. Information from key informants and focus group discussions also indicated that men normally represent their wives in accessing agricultural training, extension services, and modern technology. These results reveal that women are often at a disadvantage position concerning accessing agricultural training, extension services, and modern technology. Women are the main contributor to agricultural production, leading to increased food security and in income in the community. If women do not have access to agricultural training, extension services, and modern technology, agricultural productivity is likely to decrease.

In case of bank accounts, men also dominate in access (15.6%) and in control (23.4%) over bank accounts (see Tables 2 and 3). During key informant interview, one of the key informants remarked that women in the society are not given much opportunity to control over assets in the society and in their family because

of religion. This is shown in the quote below of one of the key informants: "In our religion (Muslim) women must be behind men and not in front of men in everything" (A male key informant at Kiberege village, Kilombero District, Morogoro 4/10/2019).

Overall, the study reveals that socially constructed roles and stereotypes in production, and utilization of QDS favour men at the expense of women. The findings imply that gender mainstreaming is an essential ingredient for successful interventions in QDS utilization and production.

#### **4.0 Conclusion and Recommendations**

The study has revealed that women get fewer benefits in rice QDS production due to poor access to and control over productive resources, which are largely a result of cultural barriers that exist in many societies. To achieve increased production in rice QDS; there is a need of getting rid of cultural barriers to integrate gender at all levels and create awareness for both men and women. Using gender sensitive programs, will allow not only equality in use, but also a sustainable utilization of rice QDS resources. The important contribution of the study is that QDS cannot be isolated from the rest of the challenges facing the agricultural sector. That is, there is a need of a holistic approach that addresses the challenges in the agricultural sector including gender-based oppression. Isolated efforts are unlikely to be fruitful. Further, the findings of this study support the GAD theory, that is, socially constructed roles indeed affect not women alone but the entire community. There is a need of ensuring gender equality to facilitate production and utilization of QDS rice.

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