



# Wheat Rust Early Warning and Advisory System in Ethiopia:

Impact Assessment in Two Major Wheat-Growing Regional States

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## 5. Opinions of the agricultural extension agents

In addition to the household survey, we also collected the opinions of 57 agricultural extension agents. The age and experience of the sampled agricultural extension agents are presented in Table 20. On average, an extension agent was nearly 34 years old with 10 years of experience (Table 20). Our survey revealed that in the Oromia region, wheat was an important crop in both *meher* and *belg* seasons, but in the Amhara region, wheat was mainly cultivated in the *meher* season.

Table 20: Background information of the sampled agricultural extension agents.

Amhara region	Amhara region	Oromia region	Total/average
No. of extension agents	29	28	57
Age	32.1	35.5	33.8
Years in service	10.2	10.4	10.3
Years in service in the present location	5.4	4.0	4.7
No. of wheat farmers served	272817	163206	436023
% Expressed that wheat is a major crop	65.6	100	82.5
Wheat area (ha) in 2019 <i>belg</i> season	9.0	79110	79119
Wheat area (ha) in 2020 <i>belg</i> season	7.0	102287	102294
Wheat area (ha) in 2019 <i>meher</i> season	123055	198854	321909
Wheat area (ha) in 2020 <i>meher</i> season	123387	190517	313904

Source: Authors, based on survey November-December 2020.

In Table 21, we have presented the opinions of the agricultural extension agents on several aspects related to the EWAS. In Ethiopia, the rust EWAS messages come from the Bureau of Agriculture to the agricultural extension agents. In our survey we found that more than 65% of the extension agents in the Amhara region and all the sampled respondents in the Oromia region received the EWAS messages about rust from the Bureau of Agriculture in the 2019 *meher* and *belg* seasons. Nearly 80% of the extension agents in Amhara and all the extension agents in Oromia reported a real outbreak of rust after receiving a EWAS message. Interestingly, although all the agricultural extension agents in the Oromia region agreed that the EWAS was useful for farmers to control rust and to minimize rust-induced yield loss, less than 60% of the sampled extension agents in the Amhara region agreed with this statement. Only about 38% of the extension agents in the Amhara region believed that the EWAS had encouraged farmers to apply fungicides and cultivate rust-resistant varieties; however, 100% of the extension agents in the Oromia region agreed with the statement.

**Table 21: Opinions of the agricultural extension agents on different aspects of the EWM.**

Variables	Amhara region	Oromia region	Total/average
% that received an EWM in 2019	65.5	100.0	82.5
% that observed a real outbreak	79.3	100.0	89.5
% that believed the EWM helped farmers	58.6	100.0	78.9
% that believed the EWM had changed farmers' behavior in dealing with rust	86.2	100	93.0
% that believed the EWM encouraged farmers to apply fungicides and use rust-resistant wheat	38.0	100	68.4
% that believed yield loss would be around 25% in the absence of EWM	20.7	7.1	14.0
% that believed yield loss would be around 33% in the absence of EWM	6.9	32.1	19.3
% that believed yield loss would be around 50% or more in the absence of EWM	72.4	60.7	66.7
% that believed that farmers would pay for the rust EWMS	62.0	0.0	31.6

Source: Authors, based on survey November-December 2020.

Similar to Table 16 where the opinions of the farmers are reported, in table 21 we report the opinions of the agricultural extension officers on the potential benefits of the EWAS. More than 72% of the sampled agricultural extension agents in the Amhara region and more than 60% in the Oromia region believed that in the absence of the EWAS, wheat yield loss due to rust would be 50% or more. Finally, while 62% of the sampled extension agents in Amhara believed that farmers would pay for the commercial service of the EWAS, none of the sampled extension agents from the Oromia region agreed. The findings of Table 21 are similar to the findings of Table 17, where 40% of the sampled farmers from the Oromia region expressed their willingness to pay for the EWAS, whereas nearly 73% of the sampled farmers from the Amhara region expressed their willingness to pay for the EWAS.