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Stakeholder Perceptions on Geographic Zoning in Rwanda's Coffee Sector and Opportunities for Policy Adjustment

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1. Introduction

In 2016, the government of Rwanda (GOR) implemented a zoning policy in the coffee sector, which entails the development of geographic "zones" around coffee washing stations (CWSs). Coffee farmers within a geographic zone must sell to a specific CWS; that CWS must only buy from designated farmers. The stated purpose of this policy is to better organize the industry, improve the relationship between CWSs and farmers, improve traceability of coffee, and reduce the role of middlemen (local traders who previously purchased coffee from farmers and then re-sold it to CWSs). Looking back on the first year of the policy's implementation, we ask the following questions. According to stakeholders, to what extent did zoning meet its goals? How did zoning affect coffee stakeholders, such as farmers, middlemen, cooperatives, and others? Finally, what—if any—solutions or modifications might improve the policy?

Key findings

- Nearly ½ of farmers surveyed do not know what the zoning policy is, or whether it applies to them
- Farmers in our sample feel negatively toward zoning, believing that it does not raise coffee cherry prices, and that it largely benefits coffee washing stations (CWSs) rather than farmers
- However, farmers believe that zoning reduced the number of traders and increased the volume of cherry going to CWSs—goals of the policy
- Other stakeholders note that zoning has harmed cooperative and privately-owned CWSs by splitting cooperatives and removing certified farmers from the cooperative/CWS that invested in certification
- Implementation of zoning by local "coffee task forces" has varied by District, and stakeholders worry that design and implementation of zones has at times been executed unfairly
- Potential modifications to zoning, based on stakeholder feedback, can be found on pages 8-9

2. Background on zoning

Geographic zoning varies in implementation across districts, but in most districts, zoning involves district government officials and coffee sector stakeholders forming "coffee task forces" which designate zones in which individual CWSs may purchase coffee cherry (AGLC, 2017b). Once a zone is established, a designated CWS may only buy from farmers within its zone. Similarly, farmers within that zone must sell to that CWS. A farmer cannot sell outside his/her zone, and a CWS cannot buy outside its zone. Independent middlemen who had previously purchased and transported coffee countrywide are no longer allowed to purchase, move, and sell coffee across zones. It is the position of the GOR that, as explained below, middlemen unfairly reduce the revenues from coffee sales that would otherwise go to the farmer, and that the longer distance transport of cherry by these local traders makes the job of reliably tracing coffee to its origin nearly impossible.

Zoning responds to several challenges. As Rwanda's coffee sector liberalized over the past decade, competition increased between CWSs purchasing coffee from farmers (Boudreaux, 2010). CWSs, some of which are cooperative -owned and some of which are private, often provided farmers with inputs and training on the basis of an agreement that farmers would sell their coffee cherry to

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the CWS that provided inputs. Middlemen, however, purchased coffee from across Rwanda (including coffee from farmers that had been invested in by CWSs) damaging the relationships between local CWSs and farmers (Macchiavello & Morjaria, 2015).

Through zoning, the GOR hopes to encourage CWSs to work productively with farmers, and to increase the sector's stability. Beyond this, because the transport of coffee around the country made traceability difficult, the GOR hopes zoning will improve traceability.

In the long term, proponents hope that traceability and stronger relationships between CWSs and farmers will improve coffee quality and increase farmer incomes. See Box 1 for a list of zoning goals identified by the National Agricultural Export Development Board (NAEB) and other government officials in official publications and public discussions.

While zoning may bring some order to the coffee sector, it will do so by limiting the choices farmers and CWSs have in whom they trade with. Other risks of zoning include: reducing farmer incomes through lack of buyer competition; weakening cooperatives by splitting members across multiple zones; and distributing zones such that CWS capacity may not match coffee supply. Given the potential benefits and risks associated with zoning, and the data availed through the AGLC project, we may ask two basic questions:

(1) Based on available data, how did zoning affect stakeholders across the coffee sector the first year of implementation?

(2) How might we apply learnings from year 1 of zoning to actions in subsequent years?

3. Methodology

This research draws upon a broad mix of quantitative and qualitative data collection methodologies. The AGLC Baseline Survey of coffee growers is the primary source of quantitative information reported; it is supplemented by a program of focused key informant interviews (KIIs) with public and private sector industry leaders, as well as focus group discussions (FGDs) with the major coffee stakeholder groups including farmers and CWS managers.

The Baseline Survey was conducted early in 2016 on a sample of 1,024 households randomly selected from listings of 16 coffee washing stations (CWS) geographically dispersed across four major coffee-growing districts representing Rwanda's four agricultural provinces (Figure 1). The selected districts are Rutsiro, Huye, Kirehe, and Gakenke. The guiding objective of the Sector/CWS selection was to maximize geographic dispersion of the four CWSs in each district and also to ensure that the four would include two that are cooperatively owned and operated and two that are privately owned and operated. In 2017, a "midline" survey was conducted on a random sample of 512 households from the baseline sample. This is the subset largely used in this analysis.

Box 1: Goals of zoning

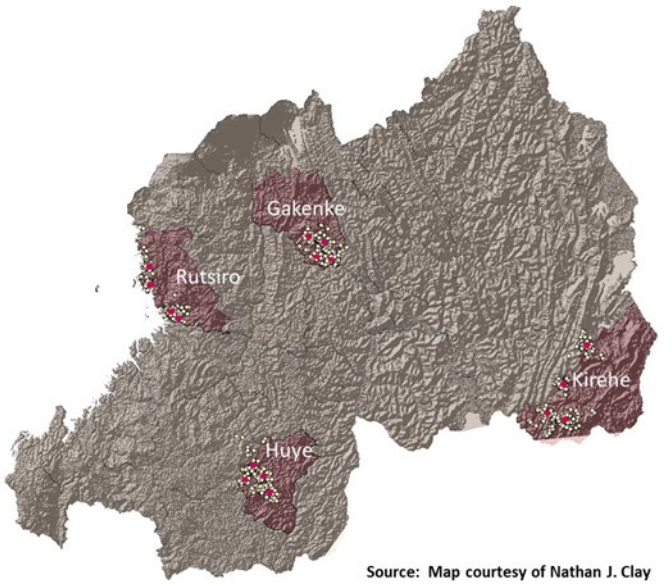
1. Improve **traceability** of coffee from farm to market
2. Ensure higher cherry prices for farmers by eliminating the middleman (trader)
3. **Strengthen relationships** between farmers and CWSs (improve input delivery/ extension to farmers)
4. **Increase supply of coffee** to struggling CWSs (improve predictability of coffee supply)
5. Increase **farmer incomes**
6. Improve **coffee quality**

Sources: NAEB presentation, 2016; AGLC roundtable, May 2016; AGLC Y1 closing workshop, August 2016

Survey analysis considerations

The section of the survey covered in this paper deals with perceived effects of zoning. Insofar as farmers are responding to questions with their views on causation without being able to prove causation, their answers should be treated as their educated opinions, not objective truths. For some questions, it would be difficult for farmers to accurately parse out a phenomenon's cause. For example, when asked whether zoning increased cherry prices, farmers may suggest that zoning failed to increase cherry prices or attribute prices to a low price floor. Both may be accurate, but it would be difficult to disentangle the effects of zoning from the effects of a low price floor. Insofar as farmers make investment and sale decisions based on their perceptions, whether or not those are strictly accurate, knowing their perceptions on the effects of zoning is crucial. For this reason, we are confident that these results can inform ongoing policy discussions on the impact of zoning.

Figure 1: Map of Sampled Districts, CWSs, and Households



Key Informant Interviews and workshops

AGLC project staff conducted a series of personal interviews with coffee sector leaders including public sector representatives, farmer organizations, and private sector stakeholders. This report includes a synthesis of 13 key informant interviews conducted in 2017.
Additional insight comes from five policy roundtables and an annual workshop held in 2016 and two policy roundtables held in early 2017. Combined with interviews and survey data, this provides a picture of how zoning's implementation has gone in year 1.

4. Findings: Farmer knowledge about zoning

One of the first important findings from the farmer survey is that many farmers do not know what zoning is, or whether it applies to them. Although zoning has been implemented nationally, many farmers (46.7%) do not know what zoning is or whether it applies to them[1]. Key informant interviews support the idea that many farmers, and others across the value chain, do not understand what zoning is or what it entails.

[1] Farmers were asked whether they knew what zoning was. They were then asked whether zoning applied to them; the same farmers that said they did not know what zoning was as said that they did not know whether it applied to them.

Box 3. Key quote: "The farmers were not aware about this zoning. Until now we are trying to help them understand, but it is difficult for them to understand."

– Private sector buyer

Box 2. Question: Does zoning apply to you?

District	Yes	No	Do not know	Total
Huye	29.7%	15.6%	54.7%	100%
Rutsiro	41.4%	24.2%	34.4%	100%
Kirehe	5.5%	2.3%	92.2%	100%
Gakenke	81.3%	13.3%	5.5%	100%
Total	39.5%	13.9%	46.7%	100%
(N)	202	71	239	512

Of farmers who do not know what zoning is, 49.4% are from Kirehe district (making up 92.2% of Kirehe respondents). One hypothesis as to why that might be the case is that, because CWSs in Kirehe are relatively spread out, and because zoning has not to date been implemented with a high level of strictness in Kirehe, zoning might have had little practical effect on farmers. Specifically, farmers may not have had to change CWSs because of zoning (AGLC, 2017b). Additionally, as is discussed on page 8, implementation of zoning has been less restrictive in Kirehe than in other districts.

The group reporting that zoning does not apply to them (13.9% of the sample) includes farmers from all districts. All farmers are under zoning, though some perceive that they are not. For the sake of understanding perceptions about zoning, we only analyze individuals who indicate that they know what zoning is (a total of 273 farmers).

Perceived effects on farmers

Farmer survey: In general, farmers view zoning negatively. With just 20.9% of farmers agreeing or strongly agreeing that zoning benefits farmers like them, many farmers do not find zoning helpful. In terms of how zoning affects farmer decision-making, 67.8% of farmers disagree or strongly disagree that zoning incentivizes planting more coffee. This suggests that farmers do not perceive zoning as a motivation to invest more in their coffee.

Figure 2: Farmer perception on whether zoning is beneficial to farmers like them

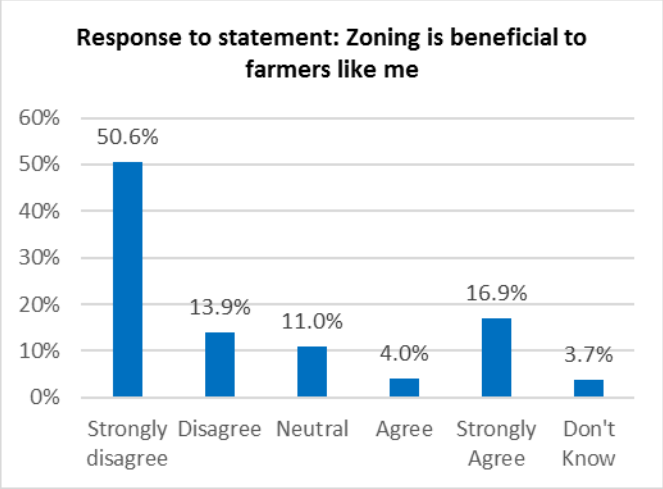
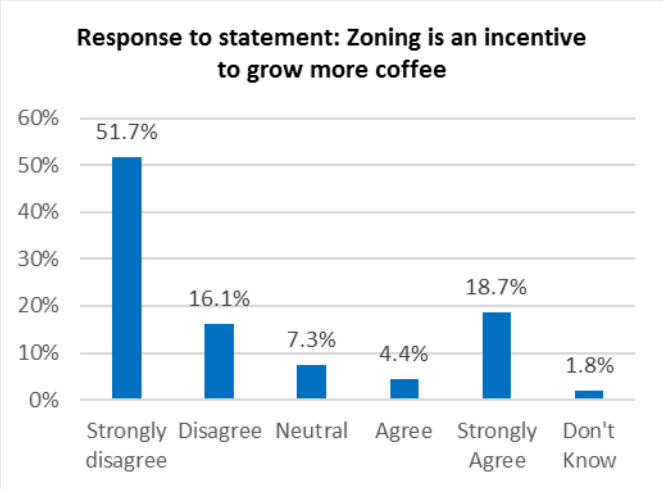
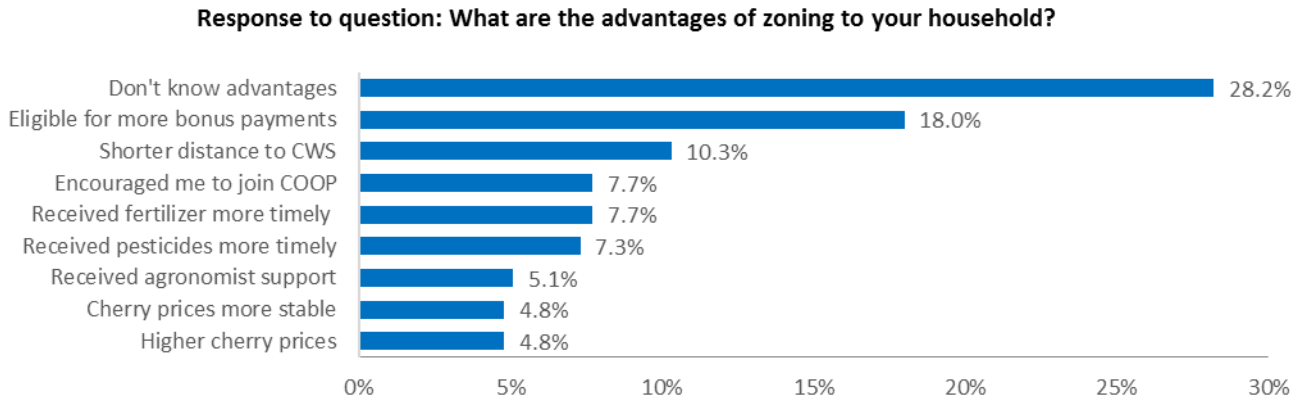
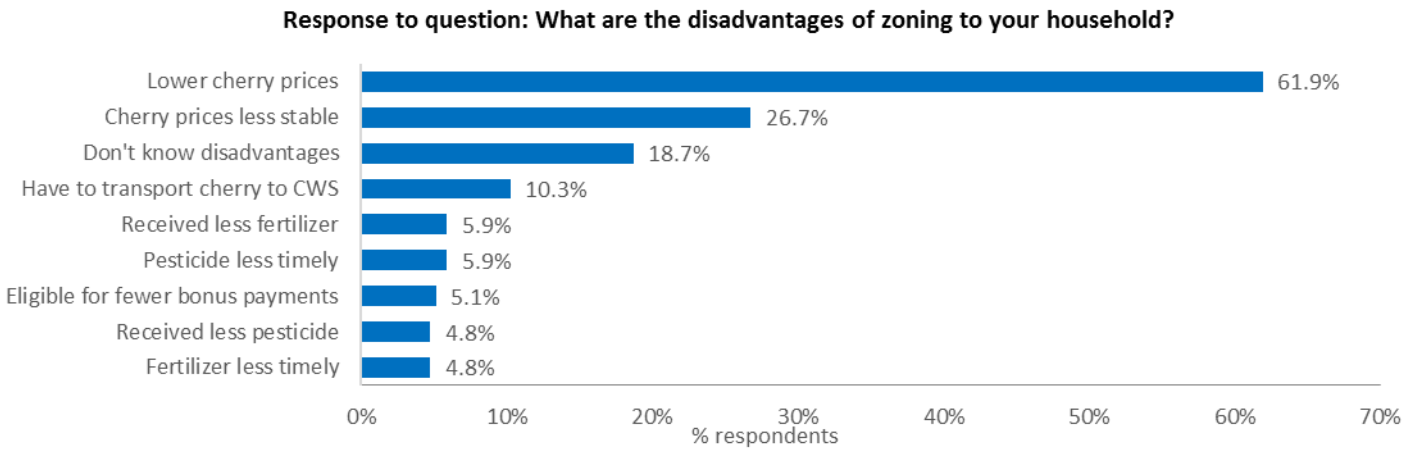


Figure 3: Farmer perceptions on whether zoning is an incentive to grow more coffee



Figures 4 and 5: Farmer perspectives on advantages and disadvantages of zoning



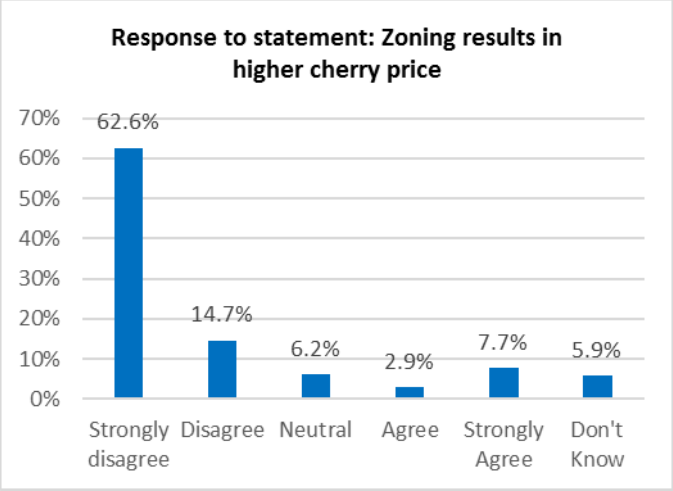


When asked what the advantages of zoning were (see Figure 4), the main advantage farmers note is eligibility for bonus payments (18%) and shorter distance to CWS (10.3%). Data on bonus payments shows that the proportion of farmers receiving "second payments" (or "premiums") did in fact increase from 27% in 2015 to 35.4% in 2016. This may provide support for farmers' assertion that access to bonus payments is a benefit of zoning. However, we cannot necessarily attribute the increase in the proportion of farmers receiving bonuses to zoning. If zoning increases access to bonus payments, this may support one purpose of zoning, which is to improve relationships between CWSs and farmers.

The most common answer to the question "what is the main advantage of zoning?" is that the respondent does not know (28.2%). A substantial proportion (18.7%) also note that they do not know the disadvantages of zoning. A major finding of this analysis is that even among farmers who know about zoning, many do not know its benefits and drawbacks.

As can be seen in Figure 5, the main disadvantages of zoning noted by farmers are low prices (61.9% note this) and price fluctuations (26.7% note this). These are counter to the intended effects of zoning. In a separate question (Figure 6), 77.2% of farmers disagree or strongly disagree that zoning results in higher cherry prices.

Figure 6: Farmer perceptions on whether zoning results in higher cherry prices



Views about the price effects of should be considered in the context of when this survey was conducted. Because 2016 was in general a low-price year for coffee, farmers might attribute low prices received to zoning when they were mainly a result of the process used by NAEB to set the floor price for coffee cherry. If zoning had been implemented in a high-price year, farmers might have concluded that zoning increased cherry prices. That said, farmers may also reach the conclusion that zoning has lowered cherry prices as a consequence of the reduced competition for cherry, a logical outcome of the zoning policy requirement that farmers sell cherry only to the designated CWS in their zone. Prior to zoning, farmers could sell to other CWSs and/or to local traders, potentially yielding more competitive prices, or at least the perception that prices were potentially higher.

Effects on farmers: stakeholder views

In workshops and interviews, stakeholders voice concern that zoning would reduce prices paid to farmers through reduced competition. They also worry that zoning might hamper buyers' ability to provide premiums to specific farmers who had been certified for Fair Trade/organic coffee. As one exporter states: "Bonuses come when we have high quality or it comes out of certification systems. …Most of the farmers in our certification system were put in a different zone. They were stopped at some point from selling to us. They will lose this money. What is the effect of that?" Relatedly, key informants note that cooperative members who had been moved out of cooperatives have a difficult time recouping membership fees.

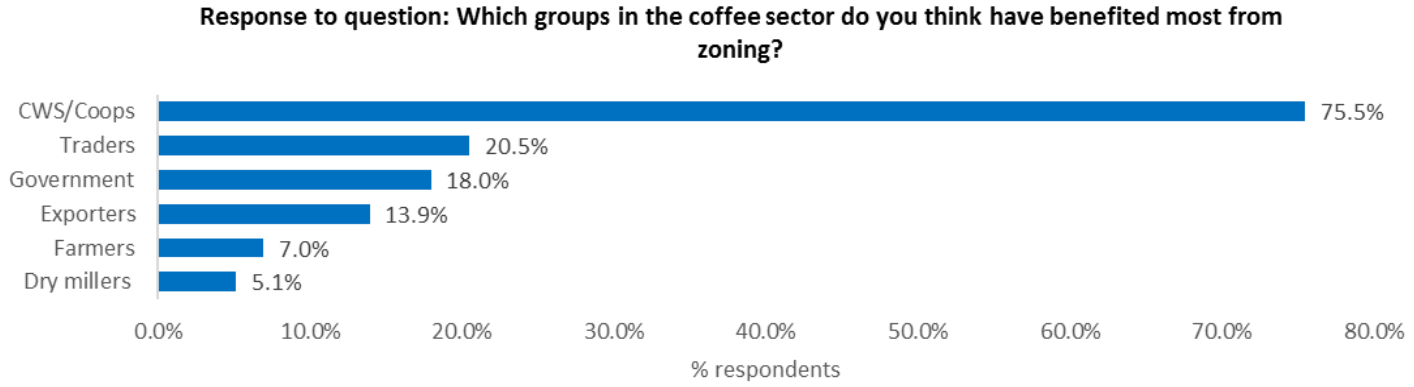
Box 4. Key quote: "If it's going to work the way it is intended to, the farmer is losing. If the CWSs are not paying second payments to begin with, you've just created a monopoly. Why does it incentivize them to do it now?"

– Private sector buyer

Box 5. Key quote: "For the benefit, [it is] that one person will give them inputs. So the farmer knows where to get inputs. Because before they used to give their [coffee] production to different people. When they wanted to get inputs the CWS management would say 'we didn't see you so we can't give you inputs.'"

– Cooperative

Figures 4 and 5: Farmer perspectives on advantages and disadvantages of zoning



Interviewees and workshop attendees suggest that, because of their desire to sell to certain CWSs, many farmers were noncompliant, crossing zones to sell coffee in violation of the zoning policy. This blunted the negative financial effects on some farmers, and may have reduced the effectiveness of zoning in controlling farmer and CWS cherry transactions.

Stakeholders perceive some positive effects of zoning on farmers. Specifically, some interviewees suggest that input distribution improved, which may have been related to zoning. Additionally, according to respondents, some CWS established better relationships with farmers than in the past.

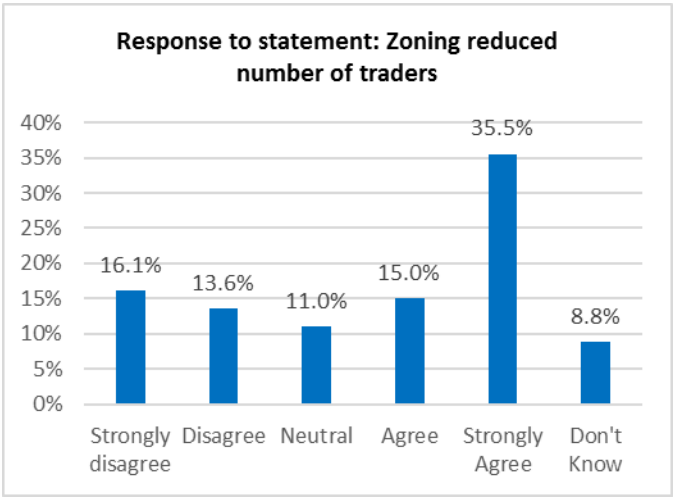
Effects on other stakeholders: Farmer survey

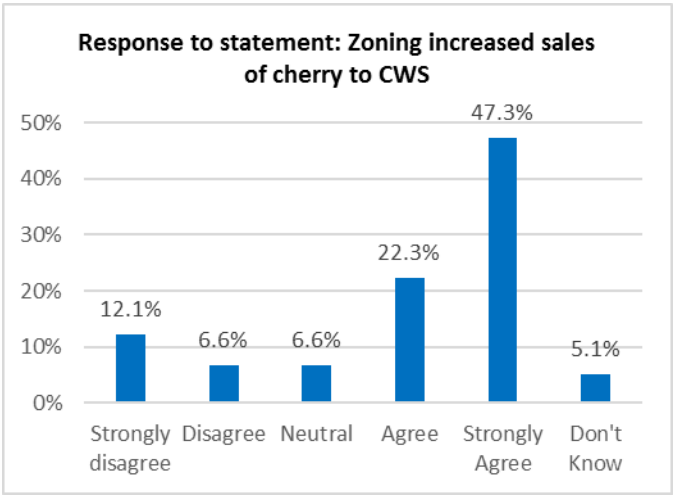
According to farmers, the primary beneficiaries of zoning are CWS/cooperatives (they were grouped together in a survey question on beneficiaries of zoning) with 75.5% of farmers saying they are the primary beneficiaries. Only 7.0% said that farmers were the primary beneficiaries.

As can be seen in Figure 8, farmers observe a decrease in the number of traders (50.6% agree or strongly agree) and in Figure 9 an increase in the volume of cherry going to CWSs (69.6% agree or strongly agree) and attribute this to zoning. This was one of the goals of zoning, so this can be counted as evidence of success.

In a question that specifically asks whether zoning is beneficial to cooperatives (Figure 10), 59.3% agree or strongly agree that cooperatives benefit. This counters findings from workshops and interviews, where stakeholders (including cooperative representatives) suggest that zoning harms cooperatives. Farmers may not have a strong sense of the financial health of cooperatives unless they are in cooperative leadership, or they may be observing evidence that cooperative representatives do not see.

Figures 8 and 9: Farmer perceptions on whether zoning reduced the number of traders, and whether it increased sales of cherry to CWS



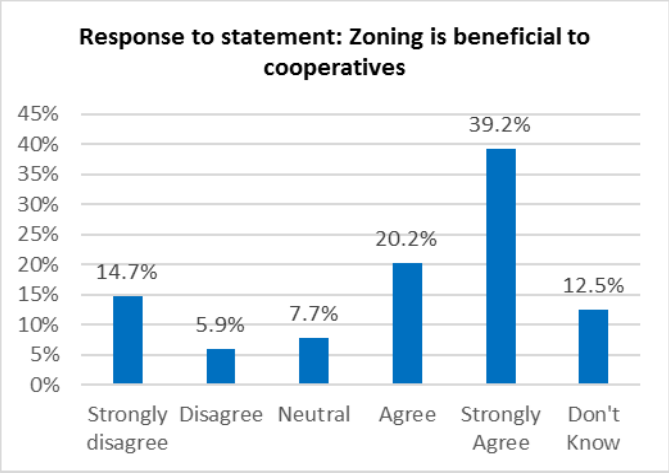


Effects on other stakeholders: stakeholder views

Cooperatives: According to stakeholders in workshops and interviews, the most important effect of zoning on cooperatives is that many were split or lost farmers. According to stakeholders, few cooperatives believe that zoning will benefit them. As one cooperative representative asks, "Are some people worse off because of zoning? Yes. Who? Cooperatives. Of course. Sometimes cooperatives will suffer from zoning." Additional challenges that both cooperatives and private CWSs face are outlined below.

Private and cooperative-owned CWSs: According to key informants and workshop participants, many private CWSs benefited from zoning—their flow of cherry increased, as did profits. Indeed, key informants agree with farmers that CWSs were primary beneficiaries of zoning. However, for some CWSs (private and cooperative-owned) the volume of cherry was less than they have previously had. For others, the volume was higher than what they could handle. Stakeholders note that in some cases, CWSs were overwhelmed by the volume of cherry and ceased buying. Because farmers are banned from selling outside of a zone, if the CWS cannot buy, farmers have no alternative buyer. An exporter notes that "We have CWSs which have no capacity receiving too much cherry. They were operating certain days, and certain days farmers couldn't sell coffee."

Figure 10: Farmer perceptions on whether zoning is beneficial to cooperatives



An effect on CWSs that applies to both cooperative- and privately-owned CWSs is that farmers who had supplied them previously were moved out of their zones. This is especially painful for CWSs that had invested in getting fair trade or organic certification for farmer groups; they had invested in certification that no longer benefited them.

While coffee task forces are supposed to take these issues into account when organizing zones, stakeholders share examples of situations in which zones cut off certified farmers from their CWS or split cooperatives. Some stakeholders believe that district officials have intentionally drawn zonal boundaries such that certain CWSs are benefited, and others are harmed. Intentional or not, stakeholders in key informant interviews and workshops suggest that the way zones were drawn produced clear winners and losers.

Depending on how cooperatives and private CWSs interacted with farmers before zoning, the policy may have improved or degraded traceability. For CWSs that had previously implemented traceability systems, losing farmers meant that their traceability system broke down. For those who had not invested in traceability, zoning provides a simple way to know where coffee originated. Though some suggest that zoning can hurt traceability, most stakeholders believe that on balance it will improve traceability. As an NGO representative notes, "Zoning gives a clear idea of production for every sector. We might have a million coffee trees, but we don't know how much they are producing. Some trees are old. We didn't know the capacity for production. Now it will be traceable."

> **Box 6. Key quote:** "They [middlemen] will be out of the system. They are dying. They are disappearing from the chain. That is one good thing."
>
> - NGO

Middlemen: Most stakeholders (and surveyed farmers) contend that middlemen are less active than they were prior to zoning's implementation. Most respondents are also happy about this change. However, some note that middlemen still trade across zonal lines in secret. Key informants suggest that implementation of zoning varies considerably. In some areas individual farmers freely sell across zones, and middlemen continue transporting cherry across zones.

Cross-cutting: Policy and implementation

This inconsistency in implementation across districts allows a black market to operate, and also allows local governments to promulgate approaches that go beyond the scope of zoning. For example, multiple key informants suggest district-level involvement in price fixing. In both cases, district governments are alleged to have set sale prices for the whole district.

Beyond this inconsistency are meaningful policy differences between districts. For example, in Kirehe, the entire district is one zone (AGLC, 2017b). Competition is allowed between CWSs within that district, but middlemen cannot take cherry in or out of the district. Huye also has implemented zoning such that there are multiple CWSs in a zone, giving farmers a choice as to where they can sell their cherry (Ibid.). In most other districts, the policy is that farmers must sell to a specific CWS and there is no competition. Differences in policy between districts are not necessarily problematic as such, but may confuse farmers who already do not understand zoning.

Potential modifications to zoning

An overarching point from key informant interviews and workshops is that—while stakeholders are concerned about specific elements of zoning—many support it in part or whole. Of the 13 key informants referenced in this paper, for example, 10 express optimism about zoning, and note the potential for improvements to its implementation.

While this analysis provides evidence that zoning achieved some goals—such as increasing cherry going to CWSs and reducing the activity of middlemen—the perception that zoning harms farmers is troubling. Additionally, perceptions on the effects of zoning on cooperatives and CWSs buying from certified farmers, and the potential for bias in designing zones, among other challenges, raise the possibility of beneficial modifications to the zoning policy. The following policy options derive from interviews and workshops. These should be considered as fodder for additional discussion and analysis.

5. Proposed modifications to zoning

Modifications to how zoning affects farmers

1. **Share additional information on zoning with farmers and others:** Given the low level of knowledge about zoning, it is critical that farmers, cooperatives, and CWSs receive information about the program. This includes information about the purpose of zoning, how zones are drawn, and what stakeholders can do if they have a concern with the system. A formal, written policy document will help ensure that the information stakeholders receive is accurate.
2. **Set a fair price floor**: It is important to analyze the effects of reducing competition between CWSs, in terms of whether reducing competition reduces prices paid to farmers. If it does reduce prices, to counter the potential negative effects of reduced competition, price floors could be raised to a level that ensures that farmers benefit from farming. Recent reports suggest that failing to provide a fair price for coffee will likely lead to continued stagnation in the coffee sector (Clay, et al., 2016; AGLC, 2017a). A challenge with this approach is that, depending on how high the floor is, it could make low quality coffee unprofitable for buyers. However, this would incentivize higher quality production. It could also be dealt with through a multi-tiered pricing system, in which the NAEB floor price applies only to high-quality coffee that is strictly measured and evaluated at CWSs, forcing low grades into an unregulated commodity-grade coffee market. An important note here is that two key informant interview respondents (both private sector buyers) and additional workshop participants considered the 2017 starting floor price too high. However, most other stakeholders in interviews and roundtables recognized a need for higher prices.
3. **Monitor CWSs to ensure they support farmers**: As part of monitoring of CWSs, NAEB could analyze whether CWSs are providing extension services and sufficient inputs to farmers (a goal of zoning). They could reward CWSs that are supporting farmers and/or penalize CWS that are not.
4. **Mechanisms for over-supplied CWS:** Provide farmers a system to sell elsewhere when a CWS is unable to purchase all coffee. Develop mechanisms to tell farmers when a CWS is not taking coffee so that they do not make the unnecessary trip.

Modifications to how zoning affects other stakeholders

5. **Provide additional guidance and oversight for districts as they implement zoning**: Stakeholders note concern with how coffee task forces have organized zones. Through closer oversight on coffee task forces, it may be possible to ensure that zoning is implemented fairly. Additionally, it may be possible to develop a system for stakeholders to communicate directly with NAEB if they feel that zoning is not being implemented fairly in their district.
6. **Work with cooperatives/CWSs to ensure they can access farmers they have invested in:** As noted, cooperative-owned and private CWSs have lost access to farmers whose farms they have invested in. Cooperative members have also lost the ability to sell to their cooperatives' CWSs, where they have

received trainings, inputs, and other services. Ensuring that buyers either have access to these farmers or are compensated for this loss would make the implementation of zoning less painful. Similarly allowing cooperative members access to their cooperatives' CWSs, or compensating them for the lack of access to their cooperatives' CWSs, would reduce the harm caused them.

7. **Accurately assess productive trees in zones:** Several exporters and producers believe that the government tree census is inaccurate. If so, this would make zones inaccurate (as well as input delivery). Stakeholders further note that, because some trees are young or are being "stumped," it is possible to have a zone with numerous trees that do not produce coffee. Assessing the number of productive trees in zones can help bolster confidence in zonal boundaries.

Cross-cutting and long-term modifications

8. **Conduct impact assessment of zoning:** Conduct a robust study on the impacts of zoning, beyond this analysis of farmer and stakeholder perceptions. This could be used to formulate longer-term adjustments to zoning.
9. **Allow individual farmers to deliver cherry outside their zones:** One exporter notes, "With 450,000 farmers and 250 washing stations, I don't think enforcing zoning is feasible." It is, however, easier to ensure that the trucks of middlemen do not cross zone lines. Zoning may meet most of its objectives, while better meeting the needs of farmers, if it allows farmers to carry coffee on their heads across zonal lines while still banning movement of cherry across zones by truck.
10. **Implement zoning at the district level**: Rather than organizing zones in which a single CWS purchases coffee without competition, it may be possible in the long term to have limited competition within districts. In this case, instead of a 1-to-1 relationship between a zone and a CWS, each district would have a small number of CWSs that would purchase cherry from any farmers in the district. This is close to the system implemented in in Kirehe and Huye in 2016. This would ease the burden on cooperatives, allow farmers to receive higher prices if one CWS is able to pay more than another, and reduce the incidences of middlemen driving across large distances to sell coffee.

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