



# Effectiveness of the Royal Highnesses in Community Engagement and Indoor Residual Spraying Implementation: Perpetual Allure and Persistent Lobbying For Positive Change in Zambia

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## Abstract

This qualitative research brings out the findings of a case study on the concerns and commitments of the Royal Highnesses in Zambia, through provincial meetings with respect to how effectively they could be engaged in the Indoor Residual Spraying (IRS) campaign season for 2020. Two hundred and eighty-five (285) Royal Highnesses from the ten provinces and 116 districts were engaged through centrally held meetings in each district. The objective of this paper is to highlight the enablers learnt from the Royal Highnesses prior to the implementation of Indoor Residual Spraying for 2020 campaign season.

The study further provides the vector control professionals with evidence-based guiding principles to the implementation of IRS through effective community engagement approaches. The Royal Highnesses were reported to be effective in engaging communities, resulting into people-centered IRS campaign decisions being made. The meetings took place on days and the traditional leaders presided over the discussions that dealt with matters of real concerns to grassroot communities. Besides, the study clarifies the approaches to achieving ownership, acceptability and responsiveness of the IRS campaign. The ideas brought forward were appropriate mechanisms for implementing effective IRS community engagement for impact.

**Keywords:** Community engagement; Royal highnesses; Indoor residual spraying; Perpetual allure; Persistent lobbying; Zambia

## Background and Its Setting

Community Engagement through the Royal Highnesses has been as a process of working collaboratively with and through groups of people affiliated by geographic proximity, with special interest, or similar situations to address issues affecting the well-being of those people." [1]. *Engagement with the community requires that not only the process but also every action involved being done with integrity.* This includes the initial discussions, the development of a process, and its execution. The objective is to have a successful process, not just a process that goes through motions. This means that the process must almost always be co-

developed with the community. As a result, the process may be felt slow moving but, in the end, will demonstrate the axiom "Go slow to go fast".

Once the decision has been made to proceed with the community engagement process (slowly, thoughtfully and inclusively), the community becomes more likely to develop a process that could straightforwardly and quickly trigger through the phases of community engagement and negotiation. Community Engagement rides on diffusion of innovation which seeks to leverage on the web of influence by the Royal Highnesses. This is usually endowed with and gracefully cascaded down to the lowest rank in the community. Influential leaders wedge a lot of

influence on their subjects hence getting a buy in from the highest office prior to the commencement of the IRS intervention, guarantees not only high impact results but also yields positive health outcomes from the target audience. The unearthed mechanisms for effective community engagement might help to reduce the increasingly common service delivery protests.

Community engagement through traditional leadership has been increasingly seen as crucial to achieving high quality, efficient collaborative efforts for Indoor Residual Spraying performance for impact. Zambia has been continuously searching for the best and most effective ways to engage citizens through the Royal Highnesses and other traditional leaders in the shaping of community acceptance and responsiveness to the IRS campaign. The Community Health Strategy has been seen as a tool for the districts to engage communities, families and individuals to take responsibility for improving their own health status [2].



*Dr Kooma with traditional leaders-Imusho-Western.*

Further, this strategic approach has been found to stimulate health care seeking behavior, knowledge and innovative models of care and networking. It addresses coverage, access and utilization of all malaria public health interventions, engagement of individuals and organizations including community traditional leadership to provide their influence for improved health outcome for their subjects.

It is however very much well known, that traditional domination has been authority largely tied to tradition or custom. It is about African solutions to local problems including health problems like malaria to reconscientise and rejuvenate the hearts and minds of people regarding the richness of collectiveness with an emphasis on “Ubuntu” (humanness and moral regeneration) and “Umoja” (togetherness) [3]. The power for traditional leaders has been based on traditions of the past that are passed on from generation to generation and have influence in their current living styles [4].

Zambia has experienced an increased number of refusals, locked homes, absenteeism, poor acceptance and responsiveness to the

IRS campaign. This situation made it imperative to carry out a qualitative research seeking to build a better understanding of how effective the traditional leaders could engage grass root communities in respect to population protection from Indoor Residual Spraying campaign.

## Materials and Methods

The study was approached under a qualitative research paradigm that involved national, provincial, district and community meetings as consultative and feedback fora, with the Royal Highnesses under the leaderships of the Minister of Health, Ministry of Traditional Affairs, Provincial Permanent Secretaries and Districts Commissioners. These meetings were spearheaded by the Provincial Health Directors and District Health Directors as technical experts through their local Permanent Secretaries Offices and District Commissioners respectively.

The National Malaria Strategic Plan (2017-2021) and the 2019 provincial, district and facility IRS performances were shared to the Royal Highnesses as performance feedback. The National IRS performance in comparison among provinces, districts and facility catchment areas were shared to the Royal Highnesses so that they come to know the performance of their chiefdoms and districts. During this time, the Royal Highnesses influences were lobbied for the community members to accept and respond well to 2020 IRS campaign implementation for impact. Presentations were made in the meetings in each province and districts, questions and answers were used for the fora for discussions, recommendations and the way forward.

## Results

A total of 285 Royal Highnesses in 10 provinces and 116 districts attended the meetings and were consulted for lobbying for their influence to the community to increase IRS acceptance and responsiveness to the intervention campaign. The results or findings from the discussions indicated the importance of community engagement to be pivotal for well-functioning twenty first century democracies and constructive relationships between communities and the government institutions to make community engagements not only desirable but necessary and viable as it is likely to lead to more equitable, sustainable public decisions and improve the live ability of local communities [5]. From the meetings deliberations above, key concerns and findings emerged:

### Untimeliness on booked time with House Hold (HH) owners

Pertinent concerns were raised by the Royal Highnesses for spray teams not meeting the scheduled dates and times to spray structures for house hold owners. Timeliness on booked time with

the HH owners to spray their homes is quite important and motivating. Showing up on time by spray operator indicates one's respect for other people. Timeliness must be on top-of- the mind. At the same time, accuracy has been important because revisions cause delays. Timeliness in IRS has been the system's capacity to provide service delivery quickly, after a need has been recognized and agreement has been done [6]. The principle of timeliness refers to the need for accountability to HH owners, when they need the service in time to fulfill their decision making of the service provided [7].

### **Inadequate Fulfilment of IRS schedules**

Management of IRS set of activities and procedures direct the completion of the IRS campaign or process under a proposed schedule. The appointment to HH owners must be effective in terms of time and effective insecticide sachets, assigned to HHs. Management of IRS schedules defines a process of SOP needs to carry out for sequencing spraying activities, estimating the IRS campaign activity duration, determining resource needs, developing and controlling the schedules.

In order to manage well the schedules, a person or a team needs to step through the below mentioned practices to develop and control effective IRS estimates assigned. This was noted, that there has been a need for the supervisors and SOPs to define the total amount of working hours required to produce a day's desired IRS outcome. Further, the spraying resource needs for the day must be estimated to determine the total number of sprayable structures required to produce the spraying coverage within the available working time and working effort by the SOP. The work effort estimates must determine how many labor hours are required for every SOP to do every scheduled activity. The IRS implementation schedule must be based on the previous year's IRS data and performance [8].

### **Lack of consulting the Royal highnesses by District IRS teams on Campaigns**

At the Centre, is Chief Webby Mulubisha of Lukena Palace, Western province posing for a photo with MACEPA health promoter, Sikombe Chilumba and an Entomologist Javan Chanda.



The Chief said, *“I am very happy that the Ministry of Health (MOH) has recognized the importance of involving us the Chiefs in the fight against malaria, so that our voices can permeate through all the community structures”*.

The Royal Highnesses complained of lack of consultations by the district teams on how effective communities could be engaged in the IRS campaign as a development issue. Involvement of Royal Highnesses/Traditional leaders and community members in decision making for service delivery like IRS and its assessment has been crucial for effective transparent and accountable governance. This review has been highly supported by Masango (2020), who argues that “Public participation lies at the heart of democracy”. Where community engagement lacks, this could lead to disconnection of the leaders with the provision of sustainable IRS service delivery. In many studies, traditional leaders were found to be effective in engaging communities when making decisions on developmental matters, like IRS campaign issues and other related issues of interest to them, within their jurisdiction [9]. When making rules and local regulations, Royal Highnesses were found to resort to curious system of consultation with close aids and the people at large [10].

### **House hold preparations for IRS campaign**

The Royal Highnesses indicated that HH preparations during IRS receive resistance during the rainy season as goods are at the mercy of being soaked by the rains in case of late start of the spraying campaign. Lack of meeting appointments by SOPs and sometimes just feeling lazy and not regarding the importance of the activity including where feedback lacks after the campaign were reported. A good service delivery must not receive resistance as it is fundamental input to population health status along with other factors, including social determinants of health [11]. Among other negative effects of resistance to such interventions; lowered morale that could spread throughout the IRS teams, which in turn could lead to increase in malaria disease burden year in year out.

### **Lack of post IRS campaign feedback to communities [12]**

The Royal Highnesses indicated that there was no information given to them after the spraying until when another campaign is about to be implemented. Obtaining feedback from the serviced community, truly needs feedback on how the activities were perceived during the previous campaign [13]. Feedback determines something one would like to know. Feedback has been sought to determine how well people/community felt or feel about the IRS service delivery and how they believe about the campaign goals. The feedback could be conducted through meetings, formal feedback data that is measurable, though focus group discussions, personal interviews, phone surveys and questionnaires [14].

Admittedly, the feedback from the communities have to be obtained to understand how the IRS campaign was perceived. Better understanding of what the community really needs, helps prioritize tasks, generate renewed excitement and interest to the

IRS program and use. Further, feedback increases community awareness of who the owner of the program is and what is being done about it and ultimately to improve the IRS campaign program [15]. Leaders engaged in malaria fight –Photo.



*Leaders engaged in malaria fight –Photo.*

Informal feedback, must be ongoing as a continuous process and must be done at different times: such as part of the campaign planning process when the initiative started and when a new campaign has to start [16]. Feedback has been found to be a good thing and all community members could benefit from the feedback. A clear feedback and opportunities to use that feedback helps to improve and enhance whether an individual community and that information could be used to make better informed decisions.

Equally, feedback has been found to build and maintain communication with the beneficiaries. However, effective feedback, both positive and negative is very helpful. In addition, feedback has been valuable information used to make important decisions. IRS effective communication, benefits the health system and the community including the whole nation. Feedback on IRS every time is when we talk about spraying to the community, then we communicate feedback.

It is courteous to provide feedback after an IRS service delivery campaign with the same zeal and vigor shown prior to the campaign. This shows respect to the communities as they are perceived as co-stakeholders in the IRS intervention. If the number of households sprayed compared with those ones not sprayed in a particular IRS campaign can be shared as a post activity survey. This will instill confidence in the communities we serve. In addition, the traditional leadership would take keen interest to improve on the number of households sprayed from the previous IRS campaign season, once they are as recognized as major stakeholders in the IRS program.

Actually, it's impossible not to give feedback. When communities listen, they have gotten, the right information and this provides value. So, feedback improves performance. It is a tool for continued learning. Feedback improves IRS management process and practices by doers.

## **Recruitment and selection of spray operators**

The recruitment of SOPs has been a thorny issue that has been frowned upon by the Royal Highnesses. The District management teams and partners in IRS have been recruiting SOPs who are not locals and this has not been well received by the Royal Highnesses and their subjects. The recruitment of strangers makes the communities be reluctant to allow strangers into their houses for fear that they will interfere with their women or steal. The problem has been over recruitment of spray operators outside own community who are regarded as strangers.

Recruitment could either be general or targeted and it is about capturing and understanding of all activities directed at locating potential SOPs (23). The recruitment, selection and appointment of SOPs has been appropriate to the present and future needs of IRS campaign. Importantly, the recruitment goal has been to identify the talent needed to perform quality of IRS performance that is appreciated by the community. The recruitment must attract the best qualified SOP for the position. It must be transparent to the satisfaction of the leaders and the health systems. However, a selection criterion must be agreed by all parties, looking at each of the knowledge skills and abilities on the SOP job description and define for the successful performance of the related functions.

## **Harassment (Physical and Sexually) during the IRS campaign**

However, in line with the ideas of gender and health, some cases of sexual harassment were reported in some chiefdoms in districts. This is where individual SOPs were either sexually or physically harassed by the superiors among the spray teams. Harassment covers a wide range of behavior of an offensive nature. This is commonly understood as behavior that demeans, humiliates or embarrasses a person and it has been characteristically identified by its unlikelihood in terms of social and moral reasonableness. These behaviors in the legal sense appear to be disturbing, upsetting or threatening. They evolve from discriminatory ground and have been found to have an effect of nullifying a person's rights or impairing a person from the benefits from their rights affecting IRS campaign service delivery [17].

## **Unfulfilled promises and disappointments intimated by the Headmen**

The appreciation of participatory management in IRS campaign has had varied successes depending upon the context in which it has been applied and the evidence from some districts that revealed mixed results [18]. Some, far from satisfactory. There have been promises especially by partners where engagement of the village headmen was by pay. At recruitment of these headmen

to spear head social mobilization, some remained unrecruited and not paid as they became more than the demanded number of required community mobilisers. The selection demonstrated that the discourse of community participation is sometimes overly ambitious in its intents and from a practical point of view is not easy to apply. This is because communities are neither universal nor homogeneous. At times many professionals pay up lip service to the whole concept of community participation because the interests of local communities and those of professionals do not always coincide [19].



*Chief Chipepo Council in Gwembe district discussing with Headmen on IRS acceptance and Responsiveness paradigm. Dr Kooma, the Vector Control Specialist-NMEC participating in the discussion*

In some situations, the historical and social political environments militate against the concept. Given the varied context, and range of management systems, as well as types of cultural heritage in Zambia, one cannot be prescriptive; the local situation should determine the nature of participation and or levels of engagement needed in a particular community [20]. The unfulfilled promises made the Royal Highnesses not happy with the health system local partnership. The approach was cited as a “bad one”.

### **Lack of transport, Increase in mosquito population and motivation incentives**

The Royal Highnesses and other traditional leaders complained of having problems with transport in terms of fuel and actual transport machines or vehicles to make them easily reach their chiefdoms. Mostly affected are the village headmen. Mobility has been very paramount to reach HH owners in order to have their homes sprayed. Transportation moves traditional leaders from one place to another using a vehicle across different infrastructure systems. It does this, using not only technology (namely vehicles, energy and infrastructure) built but also people’s time and effort; producing not only the desired outputs.

Transport serve time and motivates the Royal Highnesses in meeting their subjects. Transport ownership also depicts the weight and recognition of the Royal Highnesses. When headmen are engaged in meetings, there is need to feed them and give them

some money as a survival means. The Royal Highnesses further indicated that sensitization meetings were usually held by the local health offices and that nets and antimalarials in facilities were difficult to come by as indicated. Another complaint the Royal Highnesses gave was the increasing number of mosquitoes despite having sprayed the structures.

We therefore, describe the results of the concerns and commitments by the Royal Highnesses that they show the need for perpetual allure and persistent lobbying for the Royal Highnesses` influence for their subjects` positive change for high IRS acceptance and responsiveness for impact.

### **Discussion**

The involvement of traditional leaders to discuss community concerns as grass roots community members in decision plans making process has been at the pivotal center of democracy that leads to the successful implementation of community interventions [3]. Contrary to the ideological view that traditional leaders are “one man show” the institution of tradition leadership is an accountable structure. The consensus constitutes collective opinion and has a system that has modern liberal democracy.

However, consensus has been found to constitute collective opinion and has nothing to do with the ideology rule [21]. Effectiveness or life-giving leadership has been emerging and empowering villagers/communities in the country. This type of leadership is innovative and has brought new hope for the country. Finally, Zambia has to produce leaders who are honest, competent and committed. The country needs to embark on educational process which natures the leaders to own their own health through their subjects.



*Royal Highnesses posing for a photo after a meeting on their concerns and commitments while taking take of the Covid -19 pandemic mitigation measures.*

Undeniably, we are now faced with a challenge of nurturing and shaping new models of leadership [3]. As leaders share their gift of leadership, in return the people will honor them. The underlying premise for the traditional leaders’ roles is that they represent the ethnic units and are closet authorities to the people [22]. Indeed, traditional leadership is a sine qua non for good

governance in rural areas. Our results, cast a new light on the several pledges that arose in the Royal Highnesses meetings that showed their future commitments.

## Commitments by the Royal Highnesses towards IRS Campaign

### Leadership support to the IRS campaign

The Royal Highnesses committed themselves to encourage their subjects to accept and to be responsive towards IRS campaign. They vowed to show commitment and focus on relationships. Each of the Royal Highnesses chose their unique formula of success but still there were keys to authentic leadership that could not be ignored. Leadership is behavior, not position. Further, there are principles that must be known about leadership.

Leadership is behavior that leaders take responsibility for making decisions and bringing change in respect of the IRS campaign. They empower people to discover and use their greatest potential, towards IRS campaign and must remain to act like a leader and shape behaviour reality to reduce the malaria incidence [23].

**Each traditional leader indicated to get the best out of their subjects:** Leaders must show their subjects and must practice what they preach to their subjects especially during the campaign. Their houses must be the first ones to be sprayed. The leaders must be the ones to show obstacles with confidence and determination towards the success [24].



*Royal Highness's Consultative meeting with headmen on refusals, absenteeism and locking of structures*

**Leading means making an IRS campaign impact:** The Royal Highnesses have to emulate the greatest leaders in history. Leadership is not just brilliant public speaking and great communication skills. Leaders wherever, must have unique contribution to the welfare of their community and must make a positive change. Leadership is not chasing vision and not money [25]. A leader must be busy making sure the people live a healthier lifestyle by protecting themselves from malaria. Leaders must devote themselves to realization of the vision on how to own the health affairs of the community. The community vision is what inspires people to take action and go forward. Leaders have to discover own unique vision and coordinate all activities

towards it. Every Royal Highnesses must inspire each and every member of his/her community with that vision [26].

**Leadership is all about people:** The Royal Highnesses committed themselves to be entrusted to communicating, influencing and engaging their subjects during the campaign. They must possess communication skills since they are the foundation of effective leadership. Constantly, leaders must improve the relationship with their subjects.

### Hold campaign meetings with senior headmen

The Royal Highnesses committed themselves to holding IRS campaign village meetings, first with senior headmen, the headmen to meet their subjects before the IRS campaign season and discuss their acceptance and responsiveness. They also indicated to hold meetings during the campaign to mitigate issues pertaining to locked homes and refusals. All the Royal Highnesses in the meetings vowed to support the campaign and each of them wanted to be the highest in performance than the neighbouring Royal Highnesses. They requested to have review meetings after the campaign and before the start of the new campaign.

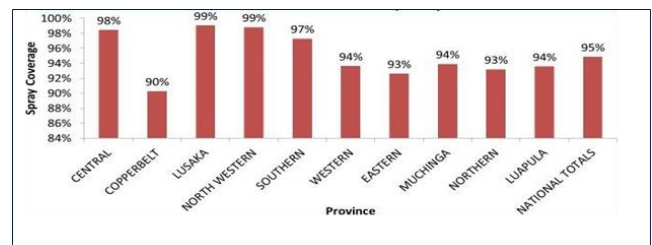
### Incorporation of vibrant headmen in the IRS community mobilization strategy

The IRS Campaign Managers must consider recruiting some headmen as both “community mobilizers” and “IRS program ambassadors”, as indicated by the Royal Highnesses. Once this partnership has been strengthened very low refusals, locked homes, absenteeism would be recorded as this strategy would have now graduated into a joint partnership between the IRS program and the earmarked communities as equal co-stakeholders in the fight against malaria crusade.

### Royal highnesses to enact and enforce by-laws

The enacted by laws must encourage communities to accept, comply and be responsive to malaria interventions in general. The 2020 IRS performance was assumed the Royal Highnesses efforts had made an impact.

### The National Indoor Residual Spraying Campaign Performances, 2019



*Figure 1: Showing the 2019 national IRS campaign performance by provinces.*

Zambia conducted Indoor Residual Spraying and mobilized communities through a total of 285 Royal Highnesses in all the ten provinces and the 116 districts in the campaign period of 2019/2020. The spray coverage was 84% and spray progress was 95% out a total eligible sprayable structures of 3,376,196. All provinces scored from 90% and above of WHO (84%) recommended IRS coverage of the targeted structures. However, a number of districts on the Copperbelt, Western, Eastern, Muchinga, Northern and Luapula experienced a coverage lower than 90%. This was attributed to a number of reasons such as refusals, absenteeism, locked homes, gassing threats, caterpillar harvesting, Nchelela, late disbursement of funds and logistics in some cases by the national level to provinces and ultimately to districts.

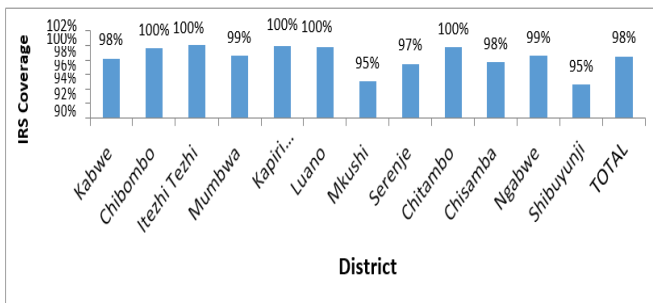
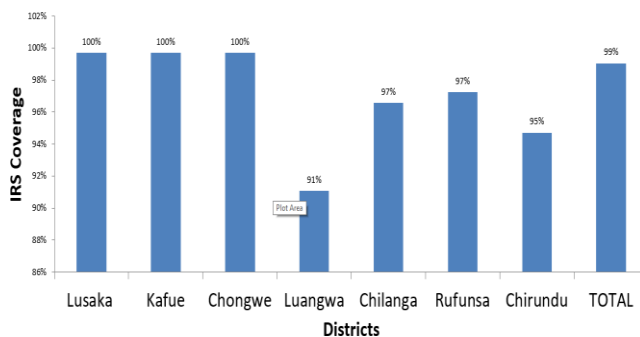


Figure 2: Showing central province 2019 IRS campaign performance by districts.

Central province has thirty-nine (39) committed Royal Highnesses to community mobilization for IRS campaign and its total IRS coverage was 98% for all the districts. Good governance and leadership have been essential requirements for the community to be considered in the 21<sup>st</sup> century, success in the eyes of the subjects. There has been a direct link between good governance, effective leadership and improved health status in particular where everyone vies for good health.

Figure 3: Showing Lusaka province 2019 IRS campaign performance by districts.



Districts like Mkushi (95%) and Shibuyunji (95%) performed lower than other districts due to poor community mobilization and late receipt of IRS logistics. Governance are intertwined with effective leadership as the key variable. Without an effective

leadership we may not envisage good governance in its totality. Every leader, individual, particularly leaders must be committed to their words to discharge their responsibilities as leaders and as an individual. Commitment being the foundation for all others responsible including service delivery coverage [27,28].

Lusaka province has nine (9) Royal Highnesses committed to social mobilization for IRS campaign. The province had a low coverage in Luangwa district of about 91% and the whole province had a coverage of about 99%. The coverage still gives some doubt as it indicates like the province had no refusals and absenteeism at all. Lusaka is the Capital City of Zambia, refusals and absenteeism cannot be ruled out and therefore three issues cannot be ruled out. During the 2019/20 campaign season, Lusaka province received the IRS chemicals late and had no adequate pumps for the campaign of which were borrowed from Eastern and Southern Provinces of the country. DDT was given to all the districts and later withdrawn and replaced by Fludora Fusion which again came late in the country. In addition, Spray operators were not paid their dues during the period of the operation until later after the exercise. The Royal Highnesses influence is more in rural districts of the province and their influence has not been very much felt in these chiefdoms.

Copperbelt province has fifteen (15) Royal Highnesses who were expected to put in much to the IRS campaign especially after holding several engagement meetings with them. In Masaiti(79%), Lufwanyama (87%) and Mpongwe districts(87%), little was done by the Royal Highnesses in engaging the community, influencing and mobilizing their subjects to accept and be responsive to the IRS campaign, hence a lot of refusals were observed in this part of the country. Chingola(87%) and Luanshya(72%) urban districts were confronted with issues of inadequate mobilization, health promotion, poor supervision and gassing fears ultimately observed poor spray coverages.

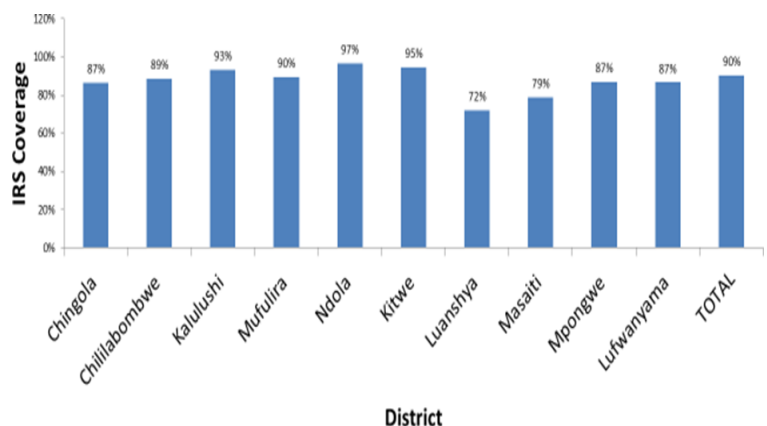


Figure 4: Showing Copperbelt province 2019 IRS campaign performance by districts.

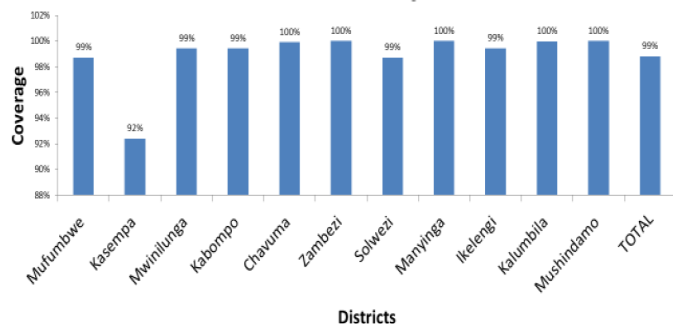


Figure 5: Showing North Western province 2019 IRS campaign performance by districts.

North western has thirty-three (33) Royal Highnesses, heavily engaged in mobilizing the community in IRS campaign implementation. The province among other provinces has the highest spray coverage (99%) for 2019 spraying campaign which also gives some element of doubt of its coverage in the absence of locked home, absenteeism and refusals. Further, it is also reported that Kasempa district had challenges of shifting cultivation but was able to attain a high coverage of 92%. The North Western traditional leaders showed good IRS performance with a high track record of working with their subjects and influencing them to accept and be responsive for their own health through the IRS campaign program. It is important that, when a community is led by a powerful positive and forward-thinking leader, one of the main areas of focus remains people’s health development in terms of good health status of such a community. A wise saying goes “If your actions inspire others to dream more, learn more, do more and become more, then you are a leader” (John Quincy Adams-1767-1848), the sixth president of the United States of America. Effective leaders like those in North Western have been known for being “visionaries”. They are comfortable, exploring the unknown thinking of what the future will become rather than being content with current health status they see now or be troubled about previous health situations in the past.

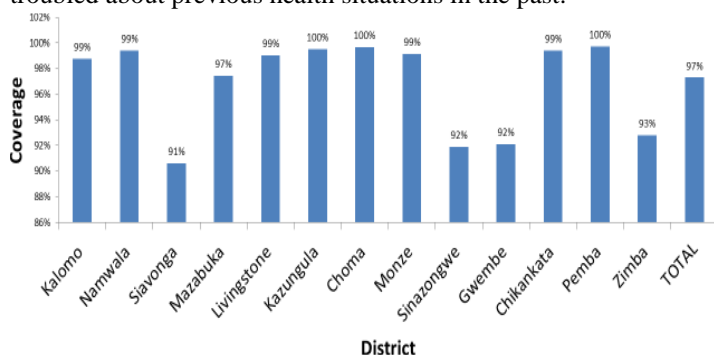


Figure 6: Showing Southern province 2019 IRS campaign performance by districts.

Southern province has thirty-three (33) Royal Highnesses who have been engaged in health matters for a long time. The province

had 97% coverage with the lowest being Siavonga (91%). It is rare for the community members to refuse IRS implementation campaign in this province. However, the valley districts are supported by partners whose policy of procuring services has been cumbersome and not progressive, as a result this was found to demotivate the IRS teams. In 2019, insecticides were reported to have finished as the campaign was progressing well towards the Central Business District [CBD] of Siavonga in the province. Similar issues were noted in Gwembe (92%), Siavonga (91%) and Sinazongwe (92%) though the two had problems of the terrain management, during the rainy season and shifting cultivation. Zimba district remains with problems of management of preparatory processes and poor coordination within the procurement circles for IRS logistics. For Zimba, low coverage compared to other districts was both a problem of poor management of the IRS program. However, it has to be noted that there many contributing factors to the successful or failure of the implementation of the IRS campaign.

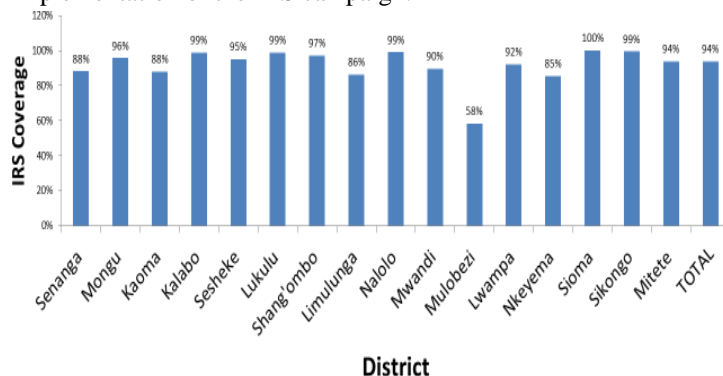


Figure 7: Showing Western province 2019 IRS campaign performance by districts.

Western province has eight Royal Highnesses (8) who have not been very active in community mobilization towards IRS campaign due to non motivating incentives to travel to communities. The terrain is geographically disadvantaged; its sand, sparsely populated and hardships in reaching homes. The terrain in Mulobezi (58%) is muddy and many people had not received the interventions due to difficulties in mobility across the district. This caused low coverages in this district.

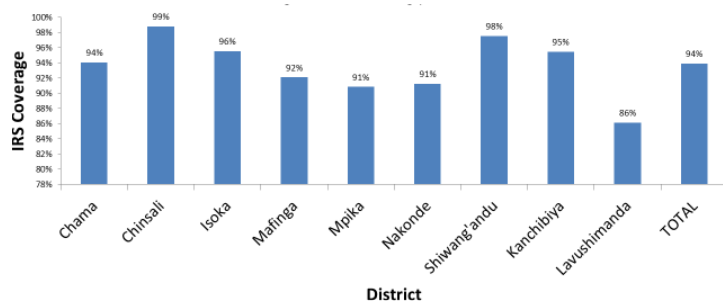
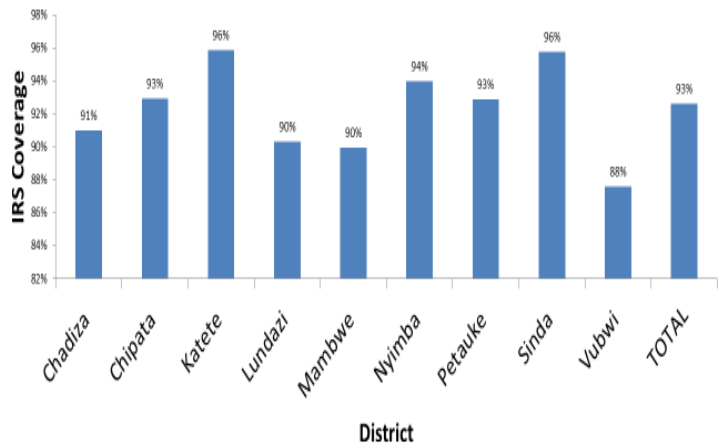


Figure 8: Showing Muchinga 2019 IRS campaign performance by districts.

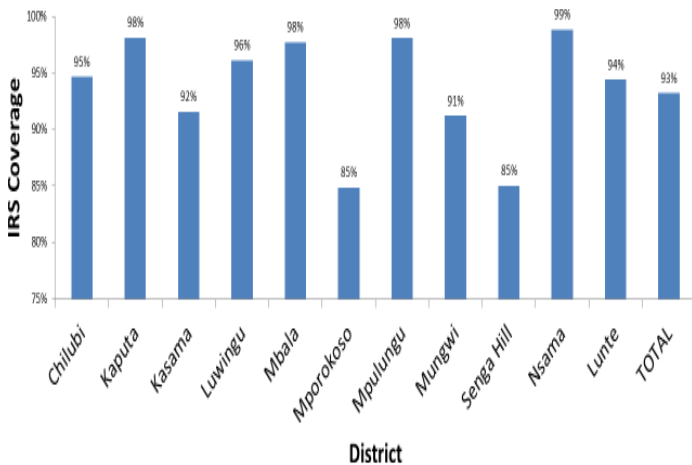
Muchinga province has (30) Royal Highnesses whose influence has been very good and the province has seen very excellent coverages. This has been attested by their coverages but in Lavushimanda (86%), coverage went down because towards the implementation period the district lost their Royal Highness and the coverage was affected by this situation. Coupled with the death of the Royal Highness, caterpillar harvesting also affected the IRS coverages. What remains to be done is to strategize before the campaign season to start early the IRS implementation. This has proved futile in other districts within the same province. Northern province has twenty-nine (29) Royal Highnesses who are very instrumental in community mobilization, sensitization and engagement of the community during the implementation of Indoor Residual Spraying Campaign. Mporokoso district (85%) did not have good coverage in 2019 because the most instrumental Royal Highness in community mobilization had since died and the one who was holding the position before a new elect was not respected and accepted by the community. Senga (85%) district Royal Highness was very instrumental but the problem was management of the IRS program by the focal point position.

**Figure 10:** Showing Luapula province IRS campaign performance by districts.

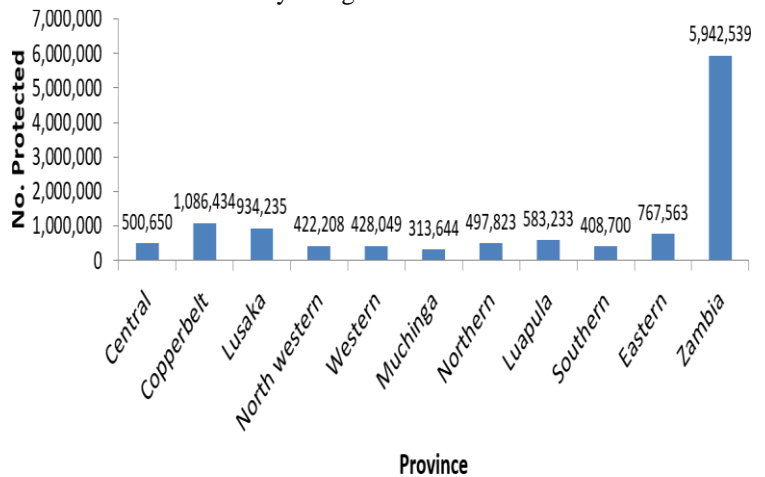
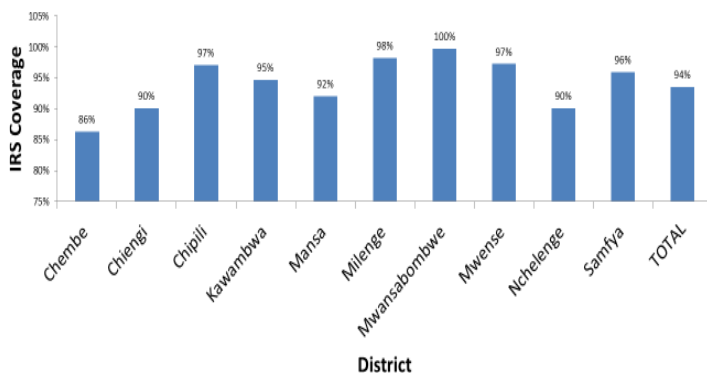


**Figure 11:** Showing Eastern province IRS campaign performance by districts.

Luapula province has thirty-nine (39) Royal Highnesses who are very instrumental in community mobilization and most of the districts did well in terms of IRS coverage. Chembe district(86%) had high refusal rates and absenteeism due to cultivation activities. Otherwise, traditional leaders in this part of the country have a vision of what to do for their people in the fight against malaria. High refusal rates in Nchelenge urban were more with government workers than the general community and the district administration has since resolved the impasse. Eastern province has fifty (50) Royal Highnesses and have been very instrumental in implementing IRS. Vubwi (88%) had the highest refusal rates ever in the province attributable to cultural issues and with a difficult terrain and low Royal Highnesses influence. No district management to reach 100% due to cultural issues which are currently being addressed.



**Figure 9:** Showing Northern province 2019 IRS campaign performance by districts.



**Figure 12:** Showing Number of Women protected by IRS in each province.

Nationally, there is still a need to encourage women to be available during the IRS campaign in homes than only children to attend to spray teams.

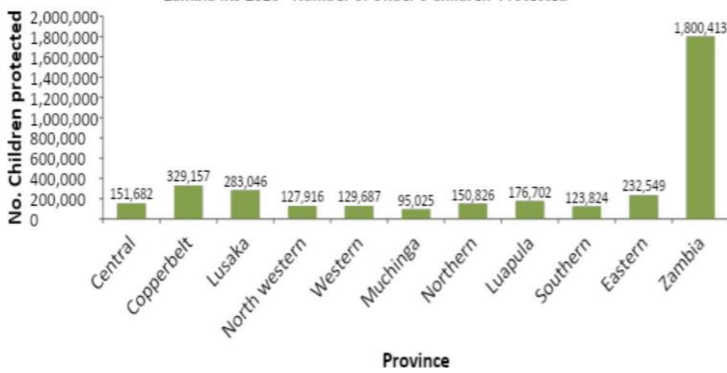


Figure 12: Showing number of under-five (5) children protected.

### Coverage for the under-fives remains cardinal and coverage has been very impressive for all provinces

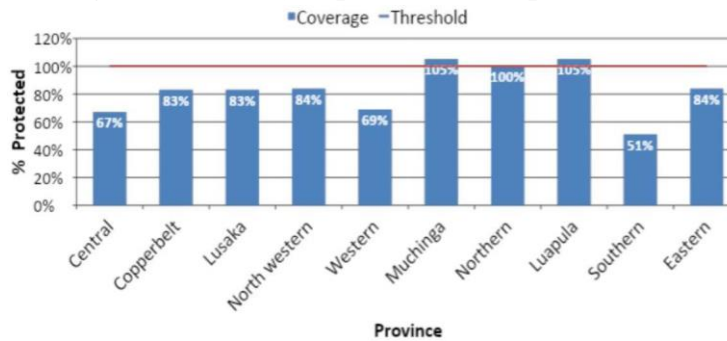


Figure 13: Percentage of population protected by IRS by province.

Percentage coverage is also above average but data management might be queried for Central, Western and Southern. Revisiting the data is still necessary.

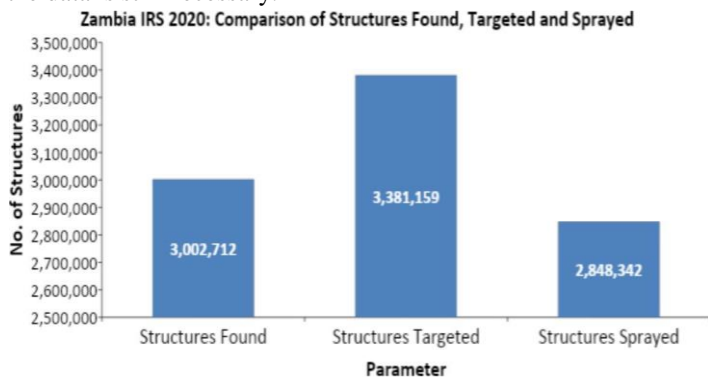


Figure 14: IRS -2020 Campaign of structures found, targeted and sprayed.

About 532,817 structures were not sprayed. Most of these structures came from Siavonga(91%), Nyimba(94%) and Chingola(87%) and other Copperbelt districts (Luanshya(72%) and Masaiti(79%) and Lusaka(Luangwa(91%) and Chirundu

(95%) due to among other insecticides shortages, refusals, absenteeism, locked homes and gassing threats.

### Conclusion

In this study, the concerns by the Royal Highnesses and their commitments to IRS campaign were discussed and leaders committed themselves in future to be effective in engaging the community in IRS campaign decision making processes. Discussions focused on specific matters of concerns and commitments by the Royal Highnesses. The resolutions were made in the consultative meetings and agreed upon by all participants. Nevertheless, the evidence from literature suggest that the ideal approach in dealing with that what affect the communities, lies in investing in efforts that strengthen existing systems instead of creating new ways of doing things.

This study built a strong case for promoting traditional leadership engagement in complementary community acceptance and responsiveness towards the IRS campaign. It was found prudent to promote a solid consultative process through leveraging (building) on what the Royal Highnesses knew and were able to do rather than to re-invent the wheel. To achieve this, it is imperative to consider developing an engagement model. The model must clarify the malaria elimination strategy, by each chiefdom IRS campaign performance. It must also lobby for influence of the Royal Highnesses, right through to the community level to accept and respond well to IRS campaign for impact and promotion of equal collaboration through sharing field concerns by either side.

To sum up, Zambian Royal Highnesses have rediscovered, in the first place, the enablers, the power of unity and dialogue, which has opened to examine for solutions to malaria problems in Zambia.

### Availability of Data and Material

The data sets generated during the analysis period are available from the corresponding author Dr E.H Kooma on reasonable request.

### Competing Interests

There are no financial or other competing interest and the authors declare that they have no competing interests whatsoever.

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