



Senegal Deliberative Poll Preliminary Results

“But let us not make this an African affair. An African speaks today to forget tomorrow. This is not why we came. We are old, and you are children, but nevertheless, we make our contribution to help you because if it works, current generations will be the beneficiaries” (DP event, participant, male, Group 6).

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About the Partners

The ResilientAfrica Network (RAN), a program funded by USAID, is a network that brings together 20 African universities in 16 countries mobilized in pursuit of a common vision: *the establishment of resilient African communities thanks to innovative solutions*. RAN is part of USAID's Office of Science and Technology (OST) and one of seven development labs operated by the universities within the framework of the networking support program of the Higher Education Solutions Network (HESN).

The network's main partners are Makerere University (the main institution), Stanford University, Tulane University, and the Center for Strategic and International Studies (CSIS). RAN is designed to be implemented by an operational network of four Resilience Innovation Labs (RILabs) located in four Sub-Saharan African regions. The West Africa RILab is located at the University for Development Studies (UDS, Tamale, Ghana) and is partnered with the University of Education, Winneba in Ghana, Cheikh Anta Diop University in Dakar, Senegal, and the University of Bamako in Mali. Our deliberative polling partners in Senegal must be commended for their considerable efforts, which led to a deliberative polling in the locality of Tivaouane-Peulh/Niague.

About Deliberative Polling®

The Deliberative Polling®¹ approach, abbreviated DP, is a data collection method using consultations that seek to contribute to the process of developing interventions that meet their needs. DP is an attempt to reshape public opinion research in a new, more constructive way. The concept of DP is based on the principle that when people have accurate and complete information, they make informed decisions and a qualitative contribution to policies and programs. Deliberative Polling is also described "as a good practice for consulting the public on development issues."

A random representative sample is first polled on the targeted issues. After this baseline poll, members of the sample are invited to gather at a single place to discuss the issues. Carefully balanced briefing materials are sent to the participants and are also made publicly available. The participants engage in dialogue with competing experts based on questions they develop in small group discussion with trained moderators.

After the deliberations, the sample is again asked the original questions. The resulting changes in opinion represent the conclusions the public would reach if people were better informed and more engaged with political issues. Since the issues of establishing resilience are political and social in nature, we use deliberative polling to consult communities and determine their informed opinions on the policy options to be considered in the context of rapid urbanization. DP provides the platform for a representative sample of a defined

¹ Deliberative Polling® is a registered trademark of James S. Fishkin. The trademark is for quality control and benefits the Stanford Center for Deliberative Democracy.

geographic region to access balanced information on policy options in order to better understand development issues that affect the community.

Report Summary

On September 24 and 25, 2016, the first Deliberative Poll in Senegal was conducted in the community of Tivaouane-Peulh / Niague. For this two-day weekend event, 167 participants attended, deliberated and completed the pre-and post-deliberation questionnaires. 56 participants who participated in the baseline interviews, prior to deliberations, did not attend the event. Therefore, a total of 223 persons were interviewed and invited to this Deliberative Poll. There were very few significant differences either in policy attitudes or demographics between the 167 attendees and the 56 non-participants. Therefore we have a strong basis for saying that the deliberators were a good microcosm of the citizens of Tivaouane-Peulh. They represented the community.

Participants deliberated about policy proposals relating to two topics: food security and WASH (water, sanitation, and hygiene). The policy proposals on food security included the promotion of micro-gardening through the formation of women's groups, training people interested in small craft trades, and training and encouraging households to participate in raising rabbits, pigeons, guinea fowl and other animals. The policy proposals on WASH included the offering of pit toilets at low cost to households, connecting more households to the municipal sewage system, and closing the Mbeubuess landfill. There were 18 policy proposals relating to food security and 24 policy proposals relating to WASH. Of the 43 policy proposals between the two topics, all but nine of the policy proposals changed significantly with deliberation. In total almost 80 percent of the proposals had significant opinion change. It is important to note that three of the nine non-significant changes were due to the already high mean before deliberations. That is, the proposal to "suggest that the town hall contract with CBOs for the collection of waste" had a mean of 0.961 out of 1 before deliberation and the mean increased to 0.963. Since the highest possible mean is 1, this result could not be statistically significant. It is important to make this, as the non-significant changes are not to lack of support, but rather very high support before and after deliberations. It was basically they had already reached the threshold for nearly the highest possible scores. Hence we can say that most of the proposals had overwhelmingly high support even after people discussed all the issues pro and con in depth. They are the thoughtful recommendations of a representative microcosm of the community.

Seven of the top ten proposals after deliberations were among the top ten prior to deliberations. The number one proposal before and after deliberation was to "request that the local government



The mayor of Tivaouane-Peulh/Niaga during the deliberations in Tivaouane-Peulh
Photo Credit: Niagia Santuah.

increase household connection (taps) to water”. The proposal mean was 0.974 out of 1 before deliberation and moved even higher to 0.986 after deliberations. The three proposals from before deliberation that made it the top ten list after deliberation were: training people interested in differing techniques for processing and packaging agricultural products (from 16 to 6), developing transport near Lac Rose (from 13 to 9), and facilitating access to microcredit for processing local agricultural products such as cereal, fruit, and vegetables (from 18 to 10).

Explanation of analyses

The questions about policy were asked before and after with a scale ranging from 0 (extremely unimportant) to 10 (extremely important). For simplicity we present them here as 0 to 1. The analyses include measures of statistical significance. Highly significant results are NOT due to chance variation. We would have a high probability of getting the same result if the project were done again. The highly significant changes are indicated in color.

We used the same analyses to compare the 167 participants with the 56 non-participants (those who took the initial survey but did not attend). That analysis with the time 1 data (the initial interviews) shows that there were very few significant differences. The participants were very representative of the overall population. We can infer this because very few people turned down the initial interview (insert number) and the method of selection was random selection of households and random selection within the households.

Questions 1 to 43 were the policy proposal questions. These proposals were developed as a part of the Deliberative Polling process that included vetting of the proposals from leading experts and policymakers. On the whole, the pre deliberation mean (average opinion) was quite high for all the questions. Questions 44 and 45 are tradeoff questions, asking the participant to weigh two ends of a scale. Questions 46 to 48 ask participants’ views regarding the seriousness of government and their community regarding this event. The two questions under 49 are political efficacy questions. Question 50 and its sub questions are value-based questions, which ask participants to rate how important these values are to their lives. We do not expect basic values to change with deliberation. Our interest is in the possible changes in policy attitudes.

All results in this report display the pre deliberation mean, post deliberation mean, amount of change between post and pre and significance level. To interpret the significance level, typically significance below 0.05 is considered very good (95 percent confident) and 0.01 is considered excellent (99 percent confident). Anything below 0.00 is spectacular (100 percent confident). A simple way of interpreting significance level is the lower the significance level the more confident the results are replicable.

This table shows the proposals with the highest scores, based on their rankings after deliberation. Significant opinion changes are indicated in yellow.

Proposal Rankings after Deliberation

T1 Rank	T2 Rank	Questions	T1 Mean	T2 Mean	T2-T1	Sig.
1	1	30. Request that the local government increase household connections (taps) to water.	0.974	0.986	0.012	0.212
4	2	43. Promote equal sanitation services between the APIX city and Tivaouane Peulh.	0.944	0.978	0.034	0.023
7	3	21. Ensure CBOs, that have waste collection contracts with the town, hire young local workers.	0.917	0.969	0.052	0.001
5	4	33. Connect more households to the municipal sewage system (ONAS)	0.930	0.969	0.039	0.004
3	5	38. Put into place awareness programs for communities, for behavioral change in hygiene and cleanliness.	0.949	0.968	0.019	0.139
16	6	8. Train people interested in differing techniques for processing and packaging agricultural products	0.883	0.963	0.081	0.000
2	7	19. Suggest that the town hall contract with CBOs for the collection of waste.	0.961	0.963	0.002	0.865
8	8	11. Promote the creation of retail stores to sell fresh and processed products	0.916	0.960	0.045	0.004
13	9	16. Develop transport near Lac Rose.	0.890	0.956	0.066	0.000
18	10	9. Facilitate access to microcredit for processing local agricultural products such as cereal, fruit, and vegetables	0.874	0.951	0.771	0.000

In addition to the policy proposals, participants were also asked questions regarding tradeoffs of these proposals. For example, participants were asked on a scale whether it would be “better for waste to be sorted at the household level so that households can receive any economic benefit” or whether it would be “better for waste to be sorted at a central facility so it is done more efficiently”. For this question, prior to deliberation, participants favored sorting at a central facility, mean of 0.703 (out of 1). After deliberations, their opinions did not shift statistically significantly, as the mean was 0.687.

“R2: It is much more hygienic and the guests would not even know if there was any garbage in the house or not, and there would be no bad smell. Previously you would have had to put your garbage in a bin and leave it in front of your house, and the refuse collectors would come

to take it away and leave your bin where it is. But now they take the peoples' bins with them. So, it would be better and more convenient if we can keep our garbage in the house for a week."

Another question posing a clear tradeoff asked participants about whether the government should pay for household water connections, "even if it means the government will charge fees or taxes" or whether the household water connections should be paid for by private companies, "even if it means those companies will charge the households". The participants before and after deliberations were more in favor of the government paying for the household connections, even if that meant charging fees or taxes. The mean before deliberation was 0.296 and after deliberation was 0.243. The change was not statistically significant.

"R (...) if the State could help us to clean up the water, we would be delighted. The water from the well is not good because there are pieces of glass inside which ruins a woman's complexion. Sometimes having water like this causes quarrels and disputes, and it is not worth it."

R8: "Water is part of human life, they know it, whether it is the SDE or whoever. Nobody can live without water, the problem is that there are people who have the means and others who do not. The SDE must redress this, for those who do not have the means, standpipes should be built for them so that they can have access to water and those who have the means to offer them a water connection and pay for it. Socially subsidized water connections are as A."



Deliberative Polling participant asks a question during the plenary session
Photo Credit: Niagia Santuah

(R7): "you have to chase after them for months to have water, sometimes we even see people giving bribes. I am not talking about the city council but it is the state's responsibility. The SDE are a private company, they have a share capital of billions and they must help people, if there are neighboring houses that cannot have water connections, the SDE must commit to building a standpipe for them."

Participants were also asked a series of questions relating to their trust in government and general political efficacy questions. Participants were confident that the government would take the results of the Deliberative Poll seriously. Participants rated the seriousness of the government 0.874 out of 1 after deliberations (the mean before deliberation was the same). And, rated their confidence in the government at 0.847 after deliberations. The mean increased statistically significantly from 0.788. That is, participants became more confident the government would utilize the results from this event after deliberations. Furthermore, the participants also became more confident that the community would utilize the results after deliberation, a statistically significant increase from 0.732 to 0.854 after deliberations.

In terms of general political efficacy questions, participants felt more strongly that they had “opinions about my community that are worth listening to” after deliberations, as the mean increased from 0.899 to 0.956.

Not only did participants feel the results would be utilized, but participants also felt the event was “extremely valuable.” The participants rated each component of the event and the event as a whole extremely high. 97% of participants rated the small group discussions and the briefing materials as “extremely valuable”. 92% of participants rated the plenary session extremely valuable and 96% rated the event as a whole as extremely valuable. In terms of the small group discussions, the participants rated the moderators very highly. Participants strongly agreed that moderators “provided the opportunity for everyone to participate in the discussion” and that “members of my group participated relatively equally in the discussions.” Further, participants strongly *disagreed* that the “moderator sometimes tried to influence the group with his or her own views.” Lastly, 98% of participants indicated that they strongly agreed “I learned a lot about people very different from me – about what they and their lives are like.”

2. Opinion Changes (English)

- On a scale of 0 to 10, where 0 is extremely unimportant, 10 is extremely important and 5 is exactly in between, how important or unimportant are each of the following?
Significant opinion changes (at the .05 level) are indicated in yellow.

Questions	T1	T2	T2-T1	Sig.
1. Promote micro-gardening by forming women's groups <i>R: « For me strengthening the table culture is important but above all they should be financed and trained in this field so they are more active in this area. This would be advantageous because before you can act you must be well trained. Training them will be a good initiative. »</i>	0.851	0.950	0.099	0.000
2. Facilitate access to micro-credit for the funding of micro-gardening for women by microfinance organizations <i>R: « If we are financed it can be done because the women of Lac Rose leave early in the morning to get salt. It is piled up for several days without a buyer. If we are financed I think it will be more profitable and easier for us. »</i>	0.853	0.942	0.089	0.000
3. The local government finds subsidies for irrigated water <i>R : « concerning water, it facilitates the work because some wells are very far from the homes and it is difficult to fetch water. So, if the city council supports us, it will facilitate the work as the women can do nothing without help. If they are helped to get back on their feet, they will work and thank God. »</i>	0.858	0.930	0.072	0.000
4. Disseminate training to people for poultry farming combined with micro-gardening technology <i>A6: « It is also a good initiative because having two jobs, two sources of income can really make it possible to have a good salary and increase production. If productivity is increased, it can generate many financial resources and it is well within the context of the fight against poverty. If we ease the task for them, they will have hope. »</i>	0.873	0.944	0.071	0.000
5. Facilitate access to microcredit to finance poultry farming units for households <i>A6 : « This is a good idea, as it will allow us to better develop activity in our homes and its smooth running. That's all. »</i>	0.851	0.925	0.073	0.001

6. Facilitate access to micro-credit for households for funding backyard installations for raising small domestic farm animals (rabbits, pigeons, guinea fowl, etc.) <i>A5: « All this is to diversify the animals you raise, fowls are good and rabbits too, and this is useful to the family. I think that this is good but the problem is that you cannot lend an amount to a person so that they reimburse you more, I do not think this is a help but rather torture and God hates that. »</i>	0.702	0.882	0.180	0.000
7. Train and encourage households to participate in raising rabbits, pigeons, guinea fowl, and other animals <i>R : « If we had someone to finance us so we had good poultry houses and food because if you have fowls and you do not have enough to feed them. We need funding to keep fowls and food to feed them to work because there is no point in sitting down doing nothing. I want to work with fowls and it would be good if we were helped and trained. »</i>	0.730	0.884	0.154	0.000
8. Train people interested in differing techniques for processing and packaging agricultural products <i>A2 : « I think this system must be followed up by training and a reduction of small bags and packaging and work with that. Because, I think that by putting grown foods in packets it is more presentable than putting them in bags: even though the packaged food costs more, people will buy it because they think that it is cleaner than that put in bags. »</i>	0.883	0.963	0.081	0.000
9. Facilitate access to microcredit for processing local agricultural products such as cereal, fruit, and vegetables <i>314: « Promoting what is produced is important because it is a chain, some produce and others promote, it is interesting. Moreover, it is necessary to have a continual process because producing without selling is problematic and it is necessary that the city council or other NGOs help them to acquire promoting tools. So, you need the market and the means, thank you. »</i>	0.874	0.951	0.771	0.000

<p>10. Promote the creation of community level agricultural processing and packaging units.</p> <p><i>R5: « If it is done, we will thank God because if you have a dream it is great. I have my products at home but I have nowhere to bring them. So if we have places where we can promote them, it will serve the whole population because women like to work but they have no support. I do not like working alone. If it was up to me, I would do it with other women. So, if we do this in Toivanen Paul there will be advancement. If all women unite to work together they will have their profits. There are a lot of people who have diplomas. If we also have warehouses, that would help us. »</i></p>	0.897	0.939	0.042	0.013
<p>11. Promote the creation of retail stores to sell fresh and processed products</p> <p><i>150: « As the others said, if you grow and cannot sell or store, there is no productivity. What you need to do is help the farmers sell their product or store them in suitable locations. We can also look for partners outside to better distribute products. »</i></p>	0.916	0.960	0.045	0.004
<p>12. Train local goods producers in marketing techniques</p> <p><i>173: « This is a good thing because as it has been said before, everything that we do, if there is no training, can go wrong. On the other hand, we should not waste our time on things that happened long ago as 150 said I do not know if it is today or yesterday. The projects must consider the aspirations of the inhabitants but there are some, if we bring in funding, will work but some like yours are no longer on the agenda because Tivaoune Peulh is going in another direction. »</i></p>	0.901	0.948	0.047	0.003
<p>13. Facilitate access to microcredit for households to open shops to sell local fresh and processed products</p> <p><i>A : « Yes what she said is right but if we could be funded so that everyone had a warehouse at home it would be better like that. You could do it because you will not have to move, you will be at home working without leaving your family. You will have peace of mind because you are in the house and you are working. If it can be done it would be interesting for women, we really want this funding, may God bring it. »</i></p>	0.890	0.936	0.045	0.011
<p>14. Train people interested in small craft trades .</p> <p><i>R4: « Our girls make art objects to sell to the tourists by putting them in baskets. When they see a stranger, they run towards them to sell their goods but this is risky due to the lack of means. »</i></p>	0.799	0.883	0.084	0.001

<p>15. Facilitate access to micro-credit to launch and run small artisan companies.</p> <p><i>R : « If there was a bit of funding it would go down very well because Lac Rose is part of Tivaoune Peulh and there is plenty of activity going on there. »</i></p>	0.812	0.893	0.080	0.0012
<p>16. Develop transport near Lac Rose.</p> <p><i>R: « This question really interests me because here we have an ecological coastal defense and tourists who come from the USA because they are attracted by its name and its charm. However, once on the site they are discouraged because there is no development. There has been no change since 1960. What interests the visitors is the pink color but with the exploitation of the salt it is beginning to disappear. There is no good road in the area. The name Lac Rose is so well known in the country but once on the site it is a disappointment. »</i></p>	0.890	0.956	0.066	0.000
<p>17. Develop small fast-food restaurants near Lac Rose.</p> <p><i>A: « There are many but it is very expensive. So, if the State brings its support, it would reduce I think. It is also an historical heritage and very soon it can be the main tourism aspect. And the way the antique dealers follow the westerners destroy the work. »</i></p>	0.873	0.928	0.055	0.003
<p>18. Provide training to tour guides.</p> <p><i>R : « There must be tour guides because there are people there who call themselves guides even when this is not the case. You must train young people who have their guide cards, so that if they go to the hotels they can be recognized. »</i></p>	0.809	0.887	0.078	0.002
<p>19. Suggest that the town hall contract with CBOs for the collection of waste .</p> <p><i>R: « Trucks stop on the road; they cannot access the neighborhoods. If the city council works with the CBOs, they can only create employment because most of the young people are unemployed, they are only doing casual labor. Many neighborhoods are infested by garbage and if it rains, no-one goes into these neighborhoods because of the odor. It would be a good idea to work together with CBOs and learn how to handle garbage. »</i></p>	0.961	0.963	0.002	0.865

20. Suggest that the town hall contract with CBOs for the management (sorting, recycling) of waste . <i>A: « It must be like this; the city council must involve associations to manage garbage because garbage collection must be done every day and not every two or three days. No one can live with garbage because garbage is a source of disease. The city council must collaborate with associations and hire young people to collect the garbage and pay them. »</i>	0.889	0.929	0.040	0.042
21. Ensure CBOs, that have waste collection contracts with the town, hire young local workers . <i>A4: « Collecting contributions will not be a good idea because someone who does not have enough to eat will not be able to contribute. If you decide to help people it must be done for free. If you decide to help somebody, you must give him the means to survive. »</i>	0.917	0.969	0.052	0.001
22. Have residents contribute (financially) for waste collection in their communities . <i>R5: « That's what I said earlier, we know that our garbage is valuable. So, we do it because if we sort we pay out less. »</i>	0.800	0.723	-0.077	0.005
23. Request that CBOs collect and sort biodegradables close to households, that can serve as compost . <i>R5: « That's what I said earlier, we know that our garbage is valuable. So, we do it because if we sort we pay out less. »</i>	0.814	0.885	0.071	0.005
24. Ensure that the CBOs sell compost to household for micro-gardening. <i>A: « It would be a very good idea because it will contribute to the reduction of expenses for women and will earn them money. »</i>	0.760	0.844	0.087	0.001
25. Reduce the cost of collection of trash for households that sort green waste, elements of compost. <i>A3: « It is a good policy because they know that if they sort they will pay a lower amount so it will encourage them to sort their garbage. That's better than forcing them to sort. »</i>	0.815	0.852	0.037	0.124
26. Reduce payment for households that sort plastics in their waste. <i>A3: « It is a good policy because they know that if they sort they will pay a lower amount so it will encourage them to sort their garbage. That's better than forcing them to sort. »</i>	0.827	0.865	0.037	0.101
27. Request that CBOs sort plastics from waste, instead of households. <i>A5: « You know if they tell us that our garbage has value we will not accept anyone sorting it on our behalf. »</i>	0.743	0.806	0.062	0.034

<p>28. Request that the town hall give garbage bins to households to facilitate waste sorting.</p> <p>A2: « <i>It is much more hygienic and the guest would not know if there was any garbage in the house or not and there will be no bad odor. Previously you would have had to put your garbage in a bin and leave it in front of your house and the refuse collectors would come to take it away and leave your bin where it is. But now they take the bins with them. So, it would be better and more convenient if we can keep our garbage with us in the house for a week. »</i></p>	0.928	0.949	0.021	0.207
<p>29. Facilitate the access of farmers to water from the National Water Company of Senegal, at preferential prices.</p> <p>A (...): « <i>This is a good thing; the small farmers need help. In fact, even in rainy season, we small farmers, are experiencing difficulties. So, if we commit ourselves to micro gardening, it would be fine to have enough water, and more support. »</i></p>	0.892	0.948	0.056	0.006
<p>30. Request that the local government increase household connections (taps) to water.</p> <p>A (...): « <i>If the State could help us clean up the water, we would be delighted. The water from the well is not good because there are pieces of glass inside which ruins a woman's complexion. Sometimes having water like this causes quarrels and disputes, and it is not worth it. »</i></p>	0.974	0.986	0.012	0.212
<p>31. Request that the public water services (PEPAM/hydraulic) install more public fountains (standposts).</p> <p>A8: « <i>Water is part of human life, they know it, whether it is SDE or whoever. Nobody can live without water; the problem is that there are people who have the means and others who do not. The SDE must redress this, for those who do not have the means standpipes should be built for them so that they can have access to water and those who have the means to offer them a water connection and pay for it. Socially subsidized water connections are as A(R7): you must chase them for months to have water, sometimes we even see people giving bribes. I am not talking about the city council but it is the state's responsibility. The SDE are a private company, they have a share capital of billions and they must help people. If there are neighboring houses that cannot have water connections, the SDE must commit to building a standpipe for them. »</i></p>	0.834	0.866	0.032	0.202

<p>32. Offer pit toilets at a low cost to households.</p> <p><i>A6: « There was a project to build toilets, many households benefited from it, eventually they stopped due to lack of means because it was a private project. The state must help us, if the projects are awarded to the private sector, households will be obliged to contribute and those who do not have the means will not be able to benefit from them. »</i></p>	0.898	0.947	0.049	0.009
<p>33. Connect more households to the municipal sewage system (ONAS)</p> <p><i>A7: « Sanitation is good, there must be a channel through which the water should flow. Water can be evacuated to avoid flooding. »</i></p>	0.930	0.969	0.039	0.004
<p>34. Make residents pay for maintenance costs for their own pit toilets.</p> <p><i>A (...): « I think in ONAS's case, it is the state and the city council because why should we pay taxes when we do not see any benefits. In addition to that, we pay our bills, take care of our children and if we also pay the ONAS bill it will be difficult for us. So, I think the state must take charge of the ONAS work. I do not think that our state helps us and that the ONAS pipes could be used to water the farms but not with water from taps if our government takes up this responsibility: we are not helped in any way compared with the West. »</i></p>	0.704	0.750	0.045	0.138
<p>35. Increase number of public toilets in public spaces.</p> <p><i>A7: « I always hear of public toilets but I have never seen any and we must have public toilets because the need is unpredictable. We see old people urinating on the walls and against house walls this is not normal. We must have public toilets because allowing access to your toilet to strangers is unacceptable to most people. »</i></p>	0.850	0.862	0.013	0.581
<p>36. Ensure that CBOs convert fertilizers in faecal sludge for agriculture.</p> <p><i>A: « Yes! This is called organic farming, that is, the fertilizer used will be natural. It is known everywhere in the world to be the best method. Because it gets rid of garbage and allows us to fertilize our farms. So, there is no doubt that this is the best method. Agriculture is beautiful and quite possible in TP it is with rain water or other water. We would also like training and equipment. We would also like the state to help us protect the land, of course the Republic's President had passed a Law whereby any land you exploit belongs to you. Let him apply this law and give the land to the people who deserve it. »</i></p>	0.673	0.822	0.149	0.000

<p>37. Encourage rain water harvesting for agriculture.</p> <p><i>A8: « It is with water that we irrigate even if there is none to speak of. We want to create storm water irrigation systems. Currently, we use storm water to irrigate our farms. We agree with storm water retention because we cannot have boreholes. »</i></p>	0.879	0.931	0.052	0.008
<p>38. Put into place awareness programs for communities, for behavioral change in hygiene and cleanliness.</p> <p><i>A : « Debilitation is not just limited in the home. For example, there are people who dirty the streets. There are no bins in the streets, even if there were they would not put their garbage in them. They are used to throwing garbage on the ground. It is necessary to educate people so that they do not throw packets on the ground. Because, even if you bury the packets for a year they will still not decay. So, you must educate people with what you know so that the other will learn, and it's a way for you to help them to learn respect. »</i></p>	0.949	0.968	0.019	0.139
<p>39. Close the Mbeubeuss landfill.</p> <p><i>A : « Yes, we must close Mbeubeuss because one day I was in a car with a person who lives in Keur Massar and she explained to me that all her children and all her family were sick because of Mbeubeuss. Even here in Tivaoune Peul, when they burn the Mbeubeuss garbage it can be felt from here. Closing Mbeubeuss and finding another place is really a good idea. »</i></p>	0.762	0.867	0.104	0.001
<p>40. Open the technical landfill center of Sindia in replacement of Mbeubeuss.</p> <p><i>A: « Of course, We must close it and bring it to Sindia. The people who work there will go to Sindia. I also heard that the inhabitants of Sindia are refusing moorings in the center, they do not want anyone bringing in diseases and bad odors. »</i></p>	0.862	0.817	-0.045	0.143
<p>41. Establish zones to sort and store waste in Mbeubeuss until it is effectively closed.</p> <p><i>A (...): « I think it's a good idea to install something there but make sure we find a place to move it where it does not bother anyone, I think it's good. »</i></p>	0.796	0.862	0.066	0.032

42. Promote energy recovery of waste from from Mbeubeuss among industries with thermal plants. <i>A: « Well because electricity is expensive and if the transformation is made easier, it will suit us because many people have no power. »</i>	0.873	0.949	0.076	0.000
43. Promote equal sanitation services between the APIX city and Tivaouane Peulh. <i>A : « They are all right, I would like to underline one thing concerning Tivaoune Peul. I hope that Tavaoune Peul will look like APIX. Because, APIX is well structured and the cars have no access problems, almost all houses are by the roadside. If Tivaoune Peul looks like APIX, we will only have to put our garbage along the road and the car will be able to take them without difficulties. I hope that it looks like APIX. Because APIX is well organized. We do not live in APIX, but we go there often and we notice that the city is very well organized. Anyone who loves Tivaoune Peul will like it to look like APIX. »</i>	0.944	0.978	0.034	0.023

44. Some people believe that it is better for waste to be sorted at the household level so that households can receive any economic benefit. Suppose these people are at point 1 on a 1 to 7 scale. Other people think that it is better for waste to be sorted at a central facility so it is done more efficiently. 4 is exactly in the middle. Where would you place yourself?

T1	T2	T2-T1	Sig.
0.703	0.687	-0.016	0.699

45. Some people think household water connections should be paid for the government even if it means the government will charge fees or taxes. Suppose these people are at point 1 on a 1 to 7 scale. Other people think household water connections should be paid for by private companies even if it means those companies will charge the households. Suppose these people are at point 7. Point 4 is exactly in between. Where would you place yourself on this scale?

T1	T2	T2-T1	Sig.
0.296	0.243	-0.053	0.206

46. On a 0 to 10 scale, where 0 is not at all serious, 10 is completely serious, and 5 is exactly in the middle, how serious or not serious do you think the government will take into account your views and suggestions in this event?

T1	T2	T2-T1	Sig.
0.875	0.874	-0.002	0.938

47. On a 0 to 10 scale, where 0 is not at all confident, 10 is completely confident, and 5 is exactly in the middle, how confident are you the government will use the results from this event?

T1	T2	T2-T1	Sig.
0.788	0.847	0.058	0.019

48. On a 0 to 10 scale, where 0 is not at all confident, 10 is completely confident, and 5 is exactly in the middle, how confident are you think the community will use the results from this event?

T1	T2	T2-T1	Sig.
0.732	0.854	.121	0.000

49. And, how strongly would you agree or disagree with the following statements ? 0 is strongly disagree, 10 is strongly agree and 5 is exactly in the middle

- a. "Most people do not know much about public affairs, decision making is best left to experts, community leaders, and government officials."

T1	T2	T2-T1	Sig.
0.519	0.633	0.113	0.013

- b. "b. I have opinions about my community that are worth listening to."

T1	T2	T2-T1	Sig.
0.899	0.956	0.057	0.067

50. Now, here are some things that people find more or less important for themselves or society to have. On a 0 to 10 scale, where 0 is extremely unimportant, 10 is extremely important and 5 is exactly in the middle, how important or unimportant would you say each of the following is to you?

Questions	T1	T2	T2-T1	Sig.
a. Making one's own choices	0.744	0.830	0.086	0.011
b. Not having to worry about food or shelter.	0.741	0.733	-0.008	0.830
c. Having a safe community.	0.978	0.995	0.016	0.006
d. Making sure everybody has clean air and water.	0.983	0.995	0.011	0.047
e. Earning as much money as possible.	0.908	0.950	0.042	0.023
f. Making sure that government does what the people want.	0.909	0.968	0.059	0.002
g. Promoting economic growth.	0.967	0.993	0.259	0.007
h. Having a well educated society.	0.976	0.994	0.018	0.011

3. Demographic Representativeness

	Participants (N=167)	Non-Participants (N=56)	Sig.
Gender			
Male	52%	61%	0.265
Female	48%	39%	
Age (in years)	44.9	38.8	0.010
Marital Status			0.001
Married	86%	70%	
Single	10%	29%	
Divorced	0%	0%	
Widowed	4%	2%	
Education			0.284
JAMAIS ETE A L ECOLE	30%	20%	
SUIS ALLE(E) A L ECOLE PRIMAIRE	27%	25%	

NIVEAU 5EME	2%	4%	
NIVEAU LYCEE	3%	2%	
NIVEAU 3EME	10%	5%	
DIPLOME(E) DE CENTRE DE FORMATION	3%	9%	
NIVEAU BAC	5%	13%	
EDUCATION SUPERIEURE	8%	11%	
ECOLE CORANIQUE	12%	13%	
Number of Children	5.26	3.79	0.017

4. Attitudinal Representativeness

Questions	Participants (N=167)	Non- Participants (N=56)	P-NP	Sig.
1. Promote micro-gardening by forming women's groups	0.851	0.831	-0.019	0.610
2. Facilitate access to micro-credit for the funding of micro-gardening for women by microfinance organizations	0.853	0.884	0.030	0.404
3. The local government finds subsidies for irrigated water	0.858	0.893	0.035	0.337
4. Disseminate training to people for poultry farming combined with micro-gardening technology	0.873	0.888	0.014	0.640
5. Facilitate access to microcredit to finance poultry farming units for households	0.851	0.879	0.027	0.472
6. Facilitate access to micro-credit for households for funding backyard installations for raising small domestic farm animals (rabbits, pigeons, guinea fowl, etc.)	0.698	0.707	0.009	0.845
7. Train and encourage households to participate in raising rabbits, pigeons, guinea fowl, and other animals	0.725	0.739	0.014	0.764
8. Train people interested in differing techniques for processing and packaging agricultural products	0.883	0.872	-0.010	0.757
9. Facilitate access to microcredit for processing local agricultural products such as cereal, fruit, and vegetables	0.874	0.911	0.037	0.273

10. Promote the creation of community level agricultural processing and packaging units.	0.897	0.870	-0.027	0.344
11. Promote the creation of retail stores to sell fresh and processed products	0.916	0.888	-0.028	0.290
12. Train local goods producers in marketing techniques	0.901	0.889	-0.012	0.667
13. Facilitate access to microcredit for households to open shops to sell local fresh and processed products	0.890	0.862	-0.029	0.306
14. Train people interested in small craft trades .	0.800	0.813	0.013	0.745
15. Facilitate access to micro-credit to launch and run small artisan companies .	0.811	0.841	0.030	0.432
16. Develop transport near Lac Rose .	0.890	0.887	-0.003	0.925
17. Develop small fast-food restaurants near Lac Rose .	0.873	0.868	-0.005	0.868
18. Provide training to tour guides .	0.810	0.800	-0.010	-.807
19. Suggest that the town hall contract with CBOs for the collection of waste .	0.961	0.961	-0.000	0.980
20. Suggest that the town hall contract with CBOs for the management (sorting, recycling) of waste .	0.889	0.862	-0.027	0.407
21. Ensure CBOs, that have waste collection contracts with the town, hire young local workers .	0.917	0.963	0.045	0.093
22. Have residents contribute (financially) for waste collection in their communities .	0.800	0.705	-0.095	0.044
23. Request that CBOs collect and sort biodegradables close to households, that can serve as compost .	0.815	0.864	0.049	0.205
24. Ensure that the CBOs sell compost to household for micro-gardening .	0.757	0.727	-0.030	0.478
25. Reduce the cost of collection of trash for households that sort green waste, elements of compost .	0.816	0.766	-0.050	0.195
26. Reduce payment for households that sort plastics in their waste .	0.825	0.787	-0.038	0.322
27. Request that CBOs sort plastics from waste, instead of households .	0.743	0.738	-0.006	0.898
28. Request that the town hall give garbage bins to households to facilitate waste sorting .	0.928	0.934	0.006	0.803
29. Facilitate the access of farmers to water from the National Water Company of Senegal, at preferential prices .	0.892	0.911	0.018	0.577

30. Request that the local government increase household connections (taps) to water .	0.974	0.975	0.001	0.934
31. Request that the public water services (PEPAM/hydraulic) install more public fountains (standposts).	0.835	0.798	-0.037	0.398
32. Offer pit toilets at a low cost to households .	0.898	0.855	-0.042	0.239
33. Connect more households to the municipal sewage system (ONAS)	0.930	0.905	-0.024	0.333
34. Make residents pay for maintenance costs for their own pit toilets .	0.704	0.645	-0.059	0.230
35. Increase number of public toilets in public spaces.	0.850	0.805	-0.044	0.291
36. Ensure that CBOs convert fertilizers in faecal sludge for agriculture .	0.673	0.725	0.053	0.342
37. Encourage rain water harvesting for agriculture.	0.879	0.880	.001	0.966
38. Put into place awareness programs for communities, for behavioral change in hygiene and cleanliness .	0.949	0.921	-0.028	0.181
39. Close the Mbeubeuss landfill.	0.760	0.752	-0.008	0.880
40. Open the technical landfill center of Sindia in replacement of Mbeubeuss .	0.862	0.863	0.001	0.983
41. Establish zones to sort and store waste in Mbeubeuss until it is effectively closed .	0.796	0.791	-0.005	0.906
42. Promote energy recovery of waste from from Mbeubeuss among industries with thermal plants .	0.874	0.871	-0.003	0.929
43. Promote equal sanitation services between the APIX city and Tivaouane Peulh .	0.944	0.913	-0.031	0.244

5. Evaluation Questions (post-deliberation only)

Finally, some questions about the discussions you have engaged in over the past couple days. On a scale of 0 to 10, where 0 is "a waste of time", 10 is "extremely valuable" and 5 is exactly in the middle, how valuable was each of the following in helping you clarify your positions on the issues?

1. The small group discussions
Mean: 0.996; 97% felt is was extremely valuable
2. The briefing materials
Mean: 0.989; 97 % felt is was extremely valuable
3. The plenary session
Mean: 0.975; 92% felt is was extremely valuable

4. The event as a whole

Mean: 0.993; 96% felt it was extremely valuable

And how strongly would you agree or disagree with each of the following statements?

	Mean	Strongly Agree
5. My group moderator provided the opportunity for everyone to participate in the discussion	0.991	96%
6. The members of my group participated relatively equally in the discussions	0.954	88%
7. My group moderator sometimes tried to influence the group with his or her own views	0.091	Strongly Disagree: 89%
8. My group moderator tried to make sure that opposing arguments were considered	0.936	91%
9. The important aspects of the issues were covered in the group discussions	0.994	98%
10. I learned a lot about people very different from me - about what they and their lives are like	0.994	98%