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An audit of Gaza registration is possible

With growing concern about the apparently excessive number of voters registered in Gaza, Renamo called Monday for an independent audit of the electoral register: http://bit.ly/Ren-audit. An investigation by this Bulletin shows that such an audit could be carried out relatively guickly, at least for Gaza province, which has the biggest problem.

Such audits are now becoming normal and have been done in a number of African countries, including Senegal, Zimbabwe, Nigeria and Kenya. Several international companies and consultants now carry out such audits.

Most electoral registers. Mozambique's, are based on biometric data fingerprints and photos. The first check is always for double registration and this is based on comparing all fingerprints. It would be possible to compare the fingerprints of people registered in Gaza in less than a week, we were told by one international company. The Zimbabwe Election Support Network did an audit of the voters roll in Zimbabwe in October last year and could be involved as well.

The issue is that the National Statistics Institute (INE), based on the 2017 national census, says there are currently 836,581 voting age adults in Gaza. But the National Elections Commission (CNE) and Technical Secretariat (STAE) say they registered 1,166,011 voters - 329,430 more than INE says are adults in Gaza. This is politically important, giving 8 extra seats to Gaza in the national parliament, and involving enough extra votes to have an impact on the presidential election.

Two respected national institutions, the INE and CNE, disagree by a very wide margin on the population of a province. This difference could have a major impact on the 15 October elections. Time is short and the perception of the fairness of the election depends on resolving this disagreement. An audit of the register would show if the census was wrong and these are real voters, or if there was fraud in the registration.

An initial audit of only Gaza could be done without changing the electoral calendar or delaying the election. It could show that the census was wrong and most voters are real. Or it could provide a list of duplicate or improper registrations which could be removed from the register book. In either case, if the audit was approved quickly, the election would not be delayed.

We call on the CNE to make available to civil society organisations or an independent body the full data base for Gaza, including fingerprints, photos, and identification details so that an audit can be carried out.

A detailed report on registration and how an audit in Gaza could be carried out starts on the next page.

Special report on why an audit of the Gaza registration is important - and possible

The importance of voter roll manipulation

Parliament is elected through proportional representation on the basis of multiple-member constituencies, which correspond to the country's provinces, and the number of parliamentary seats allocated to each constituency is based on the number of registered voters in each province. Hence, the higher the number of registered voters in a province, the higher the number of parliamentary seats the province is allocated.

Gaza province is the only constituency where the ruling party has won 100% of the seats in every election except for the first (when it lost only one Gaza's registration increased seat). 2019 dramatically and is disputed. Gaza registered 1,166,011 voters but this is 329,430 more adults than the 2917 census says live in Gaza.

Thus, in 2019, as a result of an unexplained increase number of registered voters, Gaza province gained an unprecedented 8 additional seats, increasing its representation in parliament from 14 to 22 seats (jumping from being the joint ninth largest constituency in 2014 to the joint third largest one).

The issue is not only parliament, but president. Gaza always has the highest turnout, with 66% turnout in 2015. Finger inking prevents people from voting twice, but in-depth research and evidence from a study at London School of Economics shows an unusually high level of ballot box stuffing in Gaza, typically in the form of very high turnouts at some polling stations with everyone voting for Frelimo, (Johan Ahlback, Joseph Hanlon, Jouni Kuha aand Wendy Williams for the London School of Economics with the title "Fraud at polls: can statisticians check? The iournalists and Mozambican experience". published here http://bit.ly/Ahlback-LSE

This is done not by putting extra ballot papers in the box, but simply by writing inflated numbers on the final results sheets (editais) and minutes (actas). There were no long queues at the polling station, yet everyone seemed to have voted. Gaza's history of ballot box stuffing has developed because it is a ruling party stronghold, with partisan polling staff and weak or non-existent opposition poll watchers in many polling stations, and there is no objection to inflated results in the editais and actas. This is important, because if there are

330,000 extra voters on the register books, ballot box stuffing leading to an official 66% turnout means that 220,000 of these "ghost" voters will cast their virtual ballot papers for Frelimo. This is significant, and could be 3-4% of the presidential vote, enough to shift a close race.

Eight extra seats in parliament and 4% more presidential votes are enough to swing a close election. So it becomes important to tell if the extra voters in Gaza are real.

Two anomalous provinces

The National Elections Commission (CNE) and its technical secretariat (STAE) carried out comprehensive registration of voters for the 2018 municipal elections and the 2019 presidential, legislative and provincial elections. In 2018, registration took place only in the 58 districts where municipal voters reside, and in April and May 2019 registration was extended to the remaining 103 districts. Both in 2018 and 2019, the CNE established district, provincial and national voter registration targets, on which logistical planning and allocation of resources was based, and against which execution and performance was measured.

The National Statistics Institute (INE) published the list of voting age adults by province based on the 2017 Population Census as supplied to the CNE, available on http://bit.ly/Moz-voting-age. The CNE set the national voter registration target at 14,166,317, which was 90% of the 15,692,770 voting age population for 2019. At provincial level, targets for 9 of the country's 11 provinces were close to 90% of the provincial voting age population.

In two provinces, however, the CNE targets deviated significantly from the 90% mark. In Gaza province, the provincial target was 137% of the projected voting age population, and in Zambézia province the provincial target was 77% of the provincial voting age population. In absolute numbers, the Gaza target exceeded the provincial voting age population by 308,000, and the Zambézia target was below the provincial voting age population by 635,000.

Registration ranged from 80% to 95% of target in 8 provinces but was 101% in Cabo Delgado and 102% in Zambézia and Gaza. But that meant Gaza registered 139% of the voting age population, and Zambézia only 78%.

2018 and 2019 registration by province								
	2019 Voting Age Population (VaP)	CNE Targets	Targets as % of VaP	Registered Voters	Voters as % of VaP	Voters as % of Targets		
Niassa	938,273	845,219	90.08%	677,764	72.24%	80.19%		
Cabo Delgado	1,302,322	1,176,752	90.36%	1,185,024	90.99%	100.70%		
Nampula	3,085,692	2,793,912	90.54%	2,361,973	76.55%	84.54%		
Zambézia	2,733,532	2,098,542	76.77%	2,140,125	78.29%	101.98%		
Tete	1,455,999	1,311,683	90.09%	1,119,378	76.88%	85.34%		
Manica	1,063,767	949,279	89.24%	893,426	83.99%	94.12%		
Sofala	1,286,737	1,149,184	89.31%	1,028,374	79.92%	89.49%		
Inhambane	893,763	799,453	89.45%	657,142	73.53%	82.20%		
Gaza	836,581	1,144,337	136.79%	1,166,011	139.38%	101.89%		
Maputo P	1,288,595	1,161,225	90.12%	1,015,798	78.83%	87.48%		
Maputo C	807,509	736,731	91.24%	700,906	86.80%	95.14%		
Total	15,692,770	14,166,317	90.27%	12,945,921	82.50%	91.39%		

Looking more closely at Gaza

Gaza province has 14 districts. Five of them (Xai-Xai, Chókwe, Chibuto, Mandlakazi and Bilene) have municipalities and thus had registration in both 2018 and 2019. They account for 62% of Gaza's population and of its voting age population.

In 2018, the total voting age population (VaP) of the 5 districts was 520,000, and the registration target was 482,000 (93% of the VaP). Total number of registered voters was 569,000, which represented 118% of the target and 109% of the VaP. In 2018, a total of 49,000 more people than VaP were registered.

2018 registration, 5 municipal districts								
	2018 VaP	2018 Target	2018 Target as % of VaP	2018 Regis- tration	2018 Reg as % of VaP	2018 Reg as % of Target	2018 Reg - VaP	
Xai-Xai	83,141	75,192	90.4%	97,644	117.4%	129.9%	14,503	
Chókwè	139,555	109,504	78.5%	147,966	106.0%	135.1%	8,411	
Mandlakazi	81,666	89,740	109.9%	95,723	117.2%	106.7%	14,057	
Bilene	87,455	93,848	107.3%	91,126	104.2%	97.1%	3,671	
Chibuto	128,365	113,978	88.8%	136,823	106.6%	120.0%	8,458	
Total	520,182	482,262	92.7%	569,282	109.4%	118.0%	49,100	

From 2018 to 2019, the VaP in the 5 districts grew by a total of 6,200. However, the 2019-only registration target for the 5 districts was 318,500 the target was 312,300 higher than the VaP increase. Yet the 2018 registration was already

49,100 above the VaP. Thus in those five districts, the CNE was planning to register 312,000 people that the National Statistics Institute said were not there. And, remarkably, they registered 249,000 of them.

2019 registration, 5 municipal districts									
	2018 VaP	2019 VaP increase	2019 only target	2019 only registration.	2019 registration as % of 2019 target				
Xai-Xai	83,141	998	64,752	49,383	76%				
Chókwè	139,555	1,675	127,716	90,481	71%				
Mandlakazi	81,666	980	39,402	35,892	91%				
Bilene	87,455	1,049	26,517	34,632	131%				
Chibuto	128,365	1,540	60,060	44,970	75%				
Total	520,182	6,242	318,447	255,358	80%				

It becomes clear that inflated targets were set mainly in the five districts with municipalities. Of the remaining districts, four had targets over 100% and three did not meet the target. Only three nonmunicipal districts registered more than 100% of the voting age population: Limpopo 118%, Chongoene 115%, and Chicualacuala 113%.

Thus if there was a major error in the 2017 National Census, it was in the five districts of Gaza with municipalities. In those districts nearly 300,000 more people were registered than the census said there were voting age adults - 49,100 in 2018 and 249,158 in 2019.

Gaza, all districts								
	2019	Target	target as %		Registered			
	VaP	Target	2019 VaP	2018	2019	Total		
Xai-Xai	84,139	139,944	166%		97,644	49,383	147,027	
Chókwè	141,230	237,220	168%		147,966	90,481	238,447	
Mandlakazi	82,646	129,142	156%		95,723	35,892	131,615	
Bilene	88,504	120,365	136%		91,126	34,632	125,758	
Chibuto	129,905	174,038	134%		136,823	44,970	181,793	
Limpopo	89,386	101,462	114%			105,095	105,095	
Chongoene	71,422	89,254	125%			82,443	82,443	
Chicualacuala	16,140	23,053	143%			18,262	18,262	
Chigubo	13,666	12,577	92%			13,982	13,982	
Massingir	21,927	19,314	88%			21,923	21,923	
Massangena	12,912	14,518	112%			12,287	12,287	
Guijá	55,216	50,399	91%			52,284	52,284	
Мараі	17,538	13,214	75%			15,660	15,660	
Mabalane	25,797	19,837	77%			19,435	19,435	
Total	850,428	1,144,337	135%		569,282	596,729	1,166,011	

	Registered % of VaP			Registered % of target		
	2018	2019	Total	2018	2019	Total
Xai-Xai	116%	59%	175%	70%	35%	105%
Chókwè	105%	64%	169%	62%	38%	101%
Mandlakazi	116%	43%	159%	74%	28%	102%
Bilene	103%	39%	142%	76%	29%	104%
Chibuto	105%	35%	140%	79%	26%	104%
Limpopo		118%	118%		104%	104%
Chongoene		115%	115%		92%	92%
Chicualacuala		113%	113%		79%	79%
Chigubo		102%	102%		111%	111%
Massingir		100%	100%		114%	114%
Massangena		95%	95%		85%	85%
Guijá		95%	95%		104%	104%
Mapai		89%	89%		119%	119%
Mabalane		75%	75%		98%	98%
Total			137%			102%

How a rapid audit would be done

The audit would look for improper registrations. If the CNE is correct and the 2017 National Population Census was wrong, then relatively few false registrations will be found. But the difference is very large - 300,000 voters which is more than one-third of the voters registered in the five municipal districts - which would show up in a very basic audit of the Gaza register.

To prevent false registration of voters, the Mozambican system requires that each person who registers provides a combination of alphanumeric identifiers (name, date of birth, ID card number, address, etc.) and biometric identifiers (10 fingerprints and photograph).

The main ways to register false or "ghost" voters are:

- 1. Multiple registrations of the same person, for example in 2018 and again in 2019. This could be innocent and done in error.
- 2. Minor changes to some alpha-numeric identifiers, such as changing the date of birth or reversing the order of names of real registrants to create new identities and register again. This has been reported in Zambézia, for example.
- 3. Registration of non-existent voters with fake alpha-numeric identifiers.
- 4. Registration of underage voters by entering an older birth date and otherwise correct information.
- 5. Registration of ineligible individuals. Because many people do not have identity documents, Mozambican law allows people to register if their

identity is confirmed by a community leader or two locally registered voters. This is important to ensure that all eligible people, particularly in rural areas, are able to vote. However there were complaints in the registration this year of testimony being given that under-age people were actually voting age adults, and in border areas that ineligible Zimbabweans and Zambians were actually Mozambicans.

The first and obvious check is for multiple registrations by the same person. A simple deduplication exercise was carried out by STAE between 5 and 24 June 2019, prior to the approval and publication of final voter registration data by the CNE. However, the number of Gaza registrants actually increased by 3,000 after the consolidation and verification process by STAE, and there is no information on how many entries, if any, were removed from the system because they were duplicates, nor is there independent confirmation that multiple entries of genuine registrants were not deliberately left in the system during the verification process. Thus a first check in any audit would be to repeat the removal of duplicates.

The basic audit used across the world is to check the fingerprints, using automated fingerprint identification systems (AFIS). Although the law requires those registering to provide fingerprints, the software permits people to be registered without fingerprints. Thus the second check is to looking for people registered without fingerprints, with only one or two fingerprints, or with blurred fingerprints. There should also be a check for people registered without photographs. If there are a large number of these, especially in 2019 in the

five municipal districts, this would point strongly to intentional multiple registration.

Having removed the obvious duplicates and those without fingerprints or with unreadable fingerprints, all the rest should be machine readable. An international agency would be hired to carry out the third check, looking for duplicates using automated fingerprint identification systems (AFIS). We are assured this could be done quickly, although it is not cheap. Several international companies already do AFIS checks of electoral registers. See for example

http://www.m2sys.com/wpcontent/uploads/pdf/True-Voter.pdf

With full access to the electoral registration data base, this could be done quickly. The first three steps would be:

- 1. Removing exact duplicates.
- 2. Identifying registrations with no or unreadable fingerprints.
- 3. Using AFIS software to identify duplicate fingerprints.

If these three checks show large numbers - say more than 100,000 - of duplicate voters, duplicate fingerprints, and smeared or absent fingerprints, then this data could be used to clean the voters register and remove these ghost voters. This could be done quickly enough to not change the electoral calendar.

If these checks do not find many serious cases, one possibility remains that could be checked on short notice. People may have registered with small changes in the numbers on identity documents, allowing under age children to register or allowing people to register more than once. The only check on this is a sample-based "list-to-voter" physical field verification, by drawing a statistical sample of entries from the voters' roll, and physically checking at the addresses on record whether: (i) those persons exist; (ii) they registered as voters; (iii) their personal data (name, DoB, ID card number) correspond exactly to the identifiers on the voters' roll, and (iv) they were eligible to register (age and citizenship). This sort of audit was carried out in by the Zimbabwe Election Support Network last year; its audit report is on http://kubatana.net/2018/10/19/final-report-2018voters-roll-audit/

There is not time to do a list-to-voter check for all of Gaza. Therefore we call for a sample of perhaps 1000 voters in one of the three districts with the biggest differences from the census - Xai Xai, Chókwè or Mandlakazi. Such a survey could be carried out in two weeks, at the same time as the checks for duplicates and fingerprints. Again would not delay the election calendar.

There would be three possible outcomes of this audit.

- 1. If removing duplicate registrations and duplicate fingerprints removes a significant number of voters from the Gaza register, this would reduce the number of parliamentary seats allocated to Gaza and cause increases in some other provinces. With good will, parties could be allowed to add candidates to their list, or stand with lists which were short of candidates. Again this would not affect the electoral calendar.
- 2. If the duplicate removals and the automated fingerprint checks do not identify significant numbers of ghost voters but the list-to-voter sample check is unable to find a significant number of voters or finds many duplicate or under age voters, it will be evidence of misconduct in the registration.
- 3. If the duplicate check as well as the sample list-to-voter check finds few duplicate or dubious voters, then the CNE will be vindicated and serious questions will be raised about the 2017 national population census.

A more detailed audit

The methods above would be rapid and identify through fingerprints (or the lack of them) the most obvious forms of creating "ghost" voters. Three other computer-based checks could be used. The first would look for single changes - the same ID number with a different name, for example. The second would look for one or two similarities, a minor change to a name combined with a minor change to an ID number. Third would use photograph comparison software. Such software is not very accurate, but could highlight places where the same person - typically a member of the voter registration staff - has been photographed many times in building up a false register book.

The final step in an audit would be a much larger list-to-voter check.

Finally, it should be noted that the full registration data base is a public document. The registration law (Lei 8/2014 de 12 de Março, republicação de Lei 5/2013 de 22 de Fevereiro, art 62) requires that all registration documentation be preserved and a copy transferred to the Mozambique Historical Archive (Arquivo Histórico de Moçambique). This obviously includes the data base, which is therefore, by law, intended to be made public. Therefore the CNE and STAE are free to make the data base available for audit.

Moving forward

The disagreement between two of the most prestigious institutions in Mozambique, the National Statistics Institute (INE) and the National Elections Commission (CNE) is escalating. On 17 July Arão Balate, Director Nacional de Censo e Estatísticas do INE, told a press conference that even the 2007 census showed that Gaza's population would not reach the levels registered by the CNE until 2040. The only possible response of the CNE is to allow an independent audit of its register to show it is valid.

This is not an arcane statistical dispute. The outcome of a close election on 15 October could hinge on which institution is correct. The only way to solve this disagreement before the election is to do a rapid audit of the electoral register in Gaza province, where the differences between the INE and CNE are largest.

With full cooperation of CNE and STAE, this could be done quickly by an internationally recognized company. This would not delay the electoral calendar. Either the CNE would be vindicated and the voters shown to be valid, or the audit would show significant numbers of "ghost"

voters who could be removed from the electoral roll before the election.

This cannot be an issue of party politics and fear of losing face. If this disagreement is not resolved Mozambicans nor the international community will accept that the election was fair and transparent.

We call on the National Elections Commission demonstrate both transparency and confidence in its registration by allowing an audit of the Gaza registration based on full access to the entire Gaza data base.









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The elections newsletter is also in Portuguese; para subscrever http://eepurl.com/gnZXPz The newsletters covering the 2018 local elections are on http://bit.ly/LocEl2018 Newsletters from 2013 local elections and 2014 national elections are on http://bit.ly/2H066Kg There are two archives of historic elections data, at IESE on http://www.iese.ac.mz/eleicoesresultados/ and at London School of Economics on http://bit.ly/MozEIData

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