Determinants of Maternal Health
North Eastern Province, Kenya

Paper for the Ministry of State
for Northern Kenya and other Arid lands,
Kenya

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Acronyms / Abbreviations

ANC	=Ante Natal Care
ASAL	=Arid and Semi arid land
AU	=African Union
FGC	=Female Genital Cutting
KDHS	=Kenyan Demographic and Health Survey
MDG	=Millennium Development Goals
MMI	=Maternal M-health Initiative
MMR	=Maternal Mortality Ratio
MOH	=Ministry of Health
NEP	=North Eastern Province
NFD	=Northern Frontier District
TBA	=Traditional Birth Attendant
UN	=United Nations
UNFPA	=United Nations Population Fund

I. Introduction

In 2000 the Millennium Declaration was signed by 189 countries on the United Nations Millennium Summit: The aim is to end the poverty by 2015 and consists of 8 Millennium Development Goals (MDG). Goal nr. 5 is: 'Improve Maternal Health' . The target is to reduce the Maternal Mortality Ratio (MMR) with 75 % between 1990 and 2015; an average annual decline of 5.5%[1].

Estimates of the UN 'Trends in Maternal Mortality: 1990 to 2008' give an average of 2,3%. Twenty-three countries from Sub Saharan Africa didn't make (sufficient)progress. Kenya is one of them with +38% and an annual change of +1,8%.

The MMR of Kenya is 530 deaths per 100.000 live births[2]. Women die from a wide range of complications in pregnancy, childbirth or the postpartum period. Most of the cases are preventable by good antenatal care (ANC) and care during delivery[3]. The most common causes in Kenya[4] are hemorrhagic with 34%, direct causes with 34% (like obstructed labor, complications anesthesia, C-section and ectopic pregnancy) and sepsis incl. HIV/AIDS with 16%.

In September 2010, in New York, the General Assembly of the United Nations(UN) adopted the last progress MDG report: 'Keeping the Promise: United to achieve the MDG'[5]. A lot has to be done to reach the targets of 2015. Especially in relation to Maternal health and Maternal Mortality Ratio the challenges are big. Textbox nr.1 mentions the article of the mentioned MDG-report including a compliment to the African campaign initiatives.

Textbox 1: MDG-report ; 'Keeping the Promise: United to achieve the MDG'

- Article 23M: emphasizes 'the investment in health of woman and girls to drastically reduce the number of women and children who die from preventable causes' ;
- Welcomes the initiatives of the African Union(AU) with:
  - the Summit (Kampala July 2010) called 'Maternal, Infant and Child health and development in Africa';
  - the launch of two successful African campaigns:
    - 'Accelerated Reduction of Maternal Mortality in Africa'
    - Africa cares 'No Woman should Die While Giving Life'

II. Objective

The Foundation Welfare Wajir offers this study to the Ministry of State for Northern Kenya and other Arid lands in order to support her mandate to provoke relevant ministries to prioritize and adapt their policies for the underprivileged areas in the North of Kenya and in other marginalized Arid lands of the country.

We decided to describe the current maternal health situation of the North Eastern Province (NEP), the influences of the determinants of health and, based on these findings, give recommendations. Textbox 2 shows the NEP with some data.

Textbox 2: North Eastern Province (NEP) [6,7]

- One of the 8 provinces of Kenya, the 3rd large of Kenya
- 4 districts until 2007, 11 districts since 2007
- Size: 126.902 sq km
- Population: male:1,258,648 ; Female 1,052,109 women Total 2,310,757 [8](2009 Census)
- 90% ethnic Somali and Muslim
- Livelihood: Nomadic pastoralism (camels, cattle, goats and sheep)
- Provincial capital: Garissa

III. Methods and materials

This paper is a literature review. Reliable information on Kenya and specifically the NEP is not easy to find:

- Kenya is called in the report 'Trends in Maternal Mortality: 1990 to 2008', in the category of countries: 'which is lacking good complete registration data' , 'but (some) registration and data are available'.
- The livelihood as nomadic pastoralists makes the collection of data more complicated. Resulting in under registration and unavailability of official and trustworthy data.

The framework describing the Determinants of Health is developed by the Canadian Institute for Advanced Research [9].

In textbox 3 the used data bases, search engine, websites, keywords and inclusion and exclusion criteria are mentioned.

Textbox 3:

- **Databases:** Pub Med, Eldis, Scopus
- **Search engine:** Google Scholar
- **Websites** of WHO, UN, UNFPA, Ministry of Northern Kenya, Kenya National Bureau of Statistics
- **Keywords**: Kenya, North Eastern Province, Wajir, Maternal Health, Maternal Mortality, FGM, Determinants of Health
- **Inclusion criteria**: language English, most recent reports of the government, NGO's, publications between 1990 and present.
- **Exclusion criteria**: other languages then English, literature before 1990.

IV. Results

The following determinants are identified to have an influence on maternal health in the NEP:

A. Employment, Income and Social status

Only 17,1% of the women in the age of 15-49 yr in the NEP are employed (lowest of all provinces of Kenya). The Wealth Index, which has 5 quintiles, shows the household socio-economic status of a population: Rural Kenya has 25 % in the lowest quintile, while in the NEP 75% is in the lowest quintile [10]. The Poverty Incidence in the NEP is high with 64% [11] .

No work and lack of money means less access to food, safe water, family planning, housing, education and transportation. So there is a relation between living in the lowest quintile and severe underweight women. Underweight women have a higher risk on maternal morbidity and MMR [12].

For women with a low economic status it is more difficult to get access to health facilities and receive the maternal care they need.

B. Education and literacy

Education and literacy have a positive influence on maternal health and MMR. It gives women the knowledge and demand to seek care [13]/[14]. In the NEP however women in the age of 15-49 yr (KHDS 2008-09) score very poor:

- The School attendance (NAR) is 50,5% in primary and 10,0% in secondary school.
- The educational level: 77% of the women have no education, 5,5 % complete primary (grade 7-8) and 1,8 % complete secondary (form 4). In Nairobi the data are respectively 2,5 % , 21,5 % and 31,1 %.
- Literacy (can read min.1sentence) is 21,2%, and 71,9% has no or less than 1xwk access to mass media.

The NEP has, comparing with the other provinces of Kenya, the highest level of women with no education and the lowest level of literate women.

C. Social environment

An important aspect of the social environment in the NEP is the violence since the independency of Kenya. New borders were drawn and Somali people suddenly lived in another country. Somali leaders were placed in detention by the Kenyan government and the NEP was closed to general access until the 80-ties[15]. The violence became less since 1993 when a group of women started a grass root initiative the 'Wajir Peace and Development Committee' (WPDC) They are still important to keep peace [16] (Textbox 4).

Textbox 4:
The 'Wajir Peace and Development Committee' (WPDC).
Dekha Ibrahim Abdi[1] now known as a global peace builder, is one of the initiators. The WPDC concentrates on conflict resolution/ peace building. They work together with all parties: Representatives of all clans, government, parliamentarians, Muslim and Christian religious leaders and NGO's.

[1] Dekha Ibrahim Abdi tells about her work in conflict resolution in the NEP. It also shows the physical environment of the NEP. 'A Kenyan superhero'. Jan.2007. Available from: http://www.youtube.com/watch?v=pwe6mlExHZg

They are still important to keep peace specifically in a situation of change (socio-economic or climate like drought) they do important work.

Women are vulnerable in situations of violence or conflicts. The loss of security and infrastructure increases the risk of rape, maternal health and maternal mortality.

D. Physical environment

D.1. Climate, livelihood and roads

The population lives in a semi-arid and hot climate. The nomadic pastoralists move and go to the remote areas where water and food is available for their cattle. They transport their houses on the camelback. The physical infra structure in the NEP is very poor. These factors influence negatively the access for women to health facilities in time and/or distance.

D.2. Water and Sanitation

Access to safe drinking water and basis sanitation (MDG nr.7) is difficult in rural Kenya. Reliable specific data of the NEP were not found, but there are data of rural Kenya as a whole: Only 54% of the population gets drinking water from an improved source. 80% has a non- improved sanitation facility (47% has a pit latrine and 16% has no facility at all) [17].

The distance and time to safe water depends on drought and the availability of transport. In October 2010 in Wajir district for instance (the biggest district of the NEP) the distance to water was 40 km [18] .

Lack of safe water and sanitation facilities in combination with lack of hygiene can cause water associated – diseases. Pregnant women are more vulnerable in this situation. Unclean delivery conditions can also cause maternal infections [19].

E. Culture, gender and social networks

An important aspect of the culture in the NEP is the practice of Female Genital Cutting(FGC). FGC is a surgical procedure done with religious and cultural motives. The KHDS report 2008-09 shows that in the NEP:

- 97,5 % of the women between 15-48 yr are circumcised.
- 82,5% from them have the most invasive form in which the labia are removed and sewn closed.
- 64,4% of the FGC is done at the age of 3-7 yrs and 20,8% between 8-9 yrs.
- 87 % of the women believe that the FGC is required by their religion and 90% says that female circumcision should continue.

Two studies, done by Frontiers[20], conclude that FGC is deeply rooted. It is a Somali tradition and the belief is that it is an Islamic requirement. It wants to prevent immorality by reducing women's sexual desires. The FGC is to enforce the cultural value of sexual purity in females, ensuring virginity before marriage. The fear of women

is to become promiscuous if not circumcised. The influence of other family members and the community on the lives of these girls and women are big. Women have an inferior position in a patriarchal society.
There is a strong relation between education level, the circumcision status and type of circumcision: low education means more circumcisions and more circumcisions in the most severe form (KHDS 2008-09).
FGC implies a great risk for the health and well being of women and girls and is recognized as a violation of children's rights[21]. E. Banks[22] found out that women with FGM are significantly more likely to have adverse obstetric outcomes then women without FGM. Risks are higher with more extensive FGM (Garissa provincial hospital was part of that study).

F. Health services

This determinant focuses on using Antenatal Care (ANC) facilities and on receiving good care during the delivery. Data KHDS 2008-09[23];

- 70% of the women had a skilled provider during the ANC coverage (90 % rural Kenya)
- 81% had delivery at home (highest of all provinces of Kenya) and 17% used a health facility (lowest of all provinces of Kenya). Women don't go to a health facility because they are not open (22 %), it is too far / no transport (46%) or no need (18%).

Assistance during the delivery
64% delivers with a Traditional Birth Attendance (TBA) (highest province of all provinces of Kenya) A TBA is a not skilled health professional, often a prominent woman from the community.
WHO strongly advocates for a skilled attendant [2]at every birth to reduce the MMR[24]. However, in the NEP skilled attendants are present at only 32% of the deliveries (lowest of all Kenya provinces). The number of health facilities are also limited in the NEP (14.2 beds per 100.000, 8 hospitals, 12 health centers[25]). Therefore skilled attendants attend birth at home with 15% of all the deliveries; the highest of all Kenya provinces.
Women's level of education is associated with ANC coverage: From the educated women 36% received ANC from a skilled provider. This was only 21% for the women with no education[26].
The decision of the women not to use health services, difficult access to health services and low quality or quantity of skilled human resources worsens maternal health.

V. Interventions strategies in Kenya

The government of Kenya recognizes the challenges in maternal health. The Ministry of Medical Services has designed a national reproductive health strategy Kenya 2009-2015 and also the Ministry of Public Health and Sanitation made a roadmap to attain the MDG's. [27] The new Ministry of Northern Kenya made a strategic plan 2008-12 with focus on the socio- economic development of the area[28].

[2] Definition skilled attendant: an accredited health professional- such as a midwife, doctor or nurse- who has been educated and trained to proficiency in the skills needed to manage uncomplicated pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns.

VI. Discussion and conclusions

The described determinants have direct and indirect influence on maternal health and MMR in the NEP. There are even more determinants which may have an influence, this review couldn't evaluate them all.
The determinants are inter-related and can worsen the maternal health situation even more. The situation of the NEP is the worst in comparison with other provinces. This bad score influences the average negatively of the whole of Kenya.
Looking to the results, we can summarize and distinguish three main issues[29], which can have a negative effect on the maternal health/ MMR of the women in the NEP:
1. **Lack of decision making / health seeking of the women**: Education/ literacy level can have influence on this behavior.
2. **Less access for the women to go /use health services**: Low income, an unsafe environment, availability of transport, gender, culture and social networks have influence.
3. **Insufficient care during the delivery, as a result of a lack of good human resources (both quantity and quality).** The international policy is to work with skilled attendants, but implementation in the NEP is not realistic due to a very limited availability of skilled Human resource. Living up to the policy would require a sharp increase in making skilled HR available.

The number of mobile phones is increasing in Kenya (16.304.000 mobile phones in 2008[30] ; 55% of the mobiles are in the rural area). This raises the question if this rapid growing application can be useful for the three main issues mentioned above. Recently (June 2010) the Maternal mHealth Initiative was announced: The initiative will engage with public and private stakeholders, coupling ICT expertise with that of maternal health practitioners to develop solutions able to reduce MMR.
The government recognizes the severe maternal health situation. Several ministries have made an intervention strategy, but they are not integrated yet and not transformed to provincial and district level of the NEP .

Reliable data of the NEP were not always found. In some cases rural, country or Sub Sahara Africa data are used. It is possible that the relatively rich towns, like Garissa or Wajir, have positively influenced the data. The current situation of maternal health/ MMR in the rural districts of the NEP may be worse than the scientific results of this review suggests.

VII. Recommendations

The severe situation of the NEP, the initiatives of the Ministries and the fact that Maternal Health and MDG are high on the International political agenda, creates the momentum for the following recommendations:

- Do more research on MMR on district and provincial level in the NEP to generate reliable data on this level.
- Design and implement a multi-level, multi- sectoral and tailor- made intervention program with realistic objectives and targets. Use the current national strategies. Use one coordination point: the provincial government in cooperation with the Ministry of Health. Work in close cooperation with the different parties in the NEP: government on three levels, participation of different communities and when needed NGO's.
- Improve health seeking behavior and access to health services by investments in education and health-promotion. Use community radio where available.
- Improve quality and quantity of skilled births attendants by organizing trainings in technical skills, language and local culture of the NEP.
- Invest in research in M-health as a new tool for both pregnant women and skilled birth attendance with pilots in NEP

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