

Biopolitics, climate change and water security: impact, vulnerability and adaptation issues for women

Nidhi Tandon

abstract

This *article* is not intended to be alarmist but its message is urgent. Its observations are fairly straightforward – it examines how climate change will impact on water security¹, from both the supply and the demand side and how the African continent is especially vulnerable. Its core premise is that one important factor is to ensure that women have the necessary information, tools and resources to plan and take decisions around water security as it pertains to current and future needs. The paper's focus is the African continent, with examples drawn from other developing countries. Its recommendations are extracted from workshop experiences in the field.

keywords

climate change, water security, poverty, drought

The world over, the increased degradation of ecosystems, excessive consumption of water, contamination and salinisation of water-bearings, aquifers and dams, along with the impact of extreme poverty have been worsened by the privatisation of water utilities.² The resulting catastrophe has had profound effects on the availability of drinking water and, consequently, has led to the violation of the right to life, safety, food, health and education of millions of human beings. Climate change compounds the complexity and costs of ensuring water security,

particularly in countries and regions with difficult 'hydrologic legacies'³. This *article* will consider:

- What needs to be done at community levels to enable women to articulate their needs and priorities as the drawers and managers of water;
- Why it is important for women to urgently get involved in the protection of water in solidarity with each other;
- How women are adapting to change at the local level and the implications for local, national and international water policies.



By putting a price on water, one is de facto putting a monetary value on life.

'*Faa yalo dzwaa gbe*' (Ga, Ghanaian dialect). Translated literally, this Ghanaian proverb suggests that the one who fetches water (from the river or community water source) is also the one most likely to break the water vessel. To interpret the proverb further, it serves as a reminder that those responsible for fetching water are also responsible for the safe delivery of that water and presumably for the judicious allocation of that water – from farming to cooking, drinking, washing and storing. The water fetcher might also be the most keen to protect her water source. In other words, breaking the pot is only one of many issues she might be concerned about.

A water sketch

Climate change will have an impact on water security in Africa, although the severity of the

impact is not certain. Climate change scientists suggest that total global precipitation is likely to increase during the next century, although this will not be uniform across the world. At the same time, global warming could further reduce water availability in those areas that already suffer from water stress or water scarcity.⁴ It will also lead to an increase in water variability, rising sea levels and floods.

Hydrological variability and extremes are the main challenge of maintaining water security. This will require significant adaptation, particularly by countries that lack the infrastructure and institutions to store, manage, distribute and deliver their water resources. Industrial and municipal demand will also be affected through the increased flow of migration of people from water scarce regions.

The World Commission on Water estimates that water use will increase by about 50% in the next 30 years. An estimated four billion people (half the planet) will at this time live under conditions of severe water stress, with conditions especially acute in parts of Africa, the Middle East and Asia. Compounding the relative scarcity of water is the continuous deterioration in water quality in most transition and developing economies.

The UN's Intergovernmental Panel on Climate Change (IPCC) (2007) predicts that climate change will have a graver effect on Africa than on any other continent – with drylands bordering deserts getting drier and wetlands bordering rainforests getting wetter (see map on page 9). In the dryland areas, of the 800 million people living there, it is estimated that up to 250 million people will face water shortages by 2020. Given that research data from the continent is, for the most part, unreliable, these estimates do not provide a clear picture of what level of water shortage can be expected

As it is, desertification affects 46% of Africa, and the Sahara is expanding slowly. The IPCC's most recent report provides some broad indication of the kinds of change we can expect to see (IPCC, 2007). Selected facts include:

- a) In the Sahelian region, warmer and drier conditions have led to a reduced length of growing season with detrimental effects on crops;
- b) In southern Africa, longer dry seasons and more uncertain rainfall are being recorded;
- c) Sea level rise and human development are contributing to losses of coastal wetlands and mangroves and increasing damage from coastal flooding;
- d) At lower latitudes, especially seasonally dry and tropical regions, crop productivity is projected to decrease for even small local temperature increases (1-2 degrees), which would increase the risk of hunger;
- e) Poor communities are especially vulnerable,

in particular those concentrated in high-risk areas. They tend to have more limited adaptive capacities and are more dependent on climate-sensitive resources, such as local water and food supplies.

At the same time, the UNDP's Human Development Report (2006) says in no uncertain terms that inequalities based on wealth and location play a major role in shaping water markets. The poor who pay the highest price for water systems are the most vulnerable in a water crisis. For the poorest families of sub-Saharan Africa, fees to connect to piped water exceed more than a year's income, for example.

The biopolitics of water

'Unlike geopolitics, which views nature exclusively as strategic resources, biosphere⁵ politics views the environment as the irreducible context that sustains all of life and sets the conditions and limits for all other human thought and activity. In the biospheric era, the exploitation of nature gives way to a sense of reverence for the natural world and a sustainable relationship with the environment.' (Rifkin, 1991:4)

Seen in this context, biopolitics is about the location (supply) of water, the ownership of (control over) water and about access (rights) to water – and the implications of these relationships with water on life as a whole.

The biopolitics of water is complex and uneven. It is complex because life depends on water. By putting a price on water, one is de facto putting a monetary value on life. It is uneven, because access to water often reflects socio-economic inequalities, including land ownership. In today's world, a single child's access to clean water teeters between, on the one hand, the universal management of a global common good and, on the other hand, more and more regulation



JULIUS KIMELU, IRIN

Global warming will lead to an increase in water variability, rising sea levels and floods.

by social and economic interests over a highly localised private good.

At the micro level of biopolitics, the subsequent allocation of this resource is very much about a series of 'life' decisions that, in many developing countries, have critical gendered aspects and ramifications.

Where there is water scarcity, the biopolitics of water is even more complex. How do we ensure that those who have no voice and few means have an equal claim to water? In a situation of climate volatility, supply of and control over water is made further acute – climate governs the weather, weather dictates water distribution and water distribution controls life (Leonard, nd).

Water makes up one of the three largest industries in the world (alongside oil, gas and electricity). Investor deals in infrastructure,

including water and sanitation systems, soared to \$145bn in 2006 (CARE, 2006). The Summit Water Universe in 2005 was composed of 359 companies with \$661bn of market value. In other words, those with the capital and the means regard the water sector as a high potential investment opportunity and will continue to prescribe market remedies and privatisation solutions for water scarcity into the next millennium.

In a world dominated by finance capital and high technology solutions where power and wealth is concentrated in the hands of the very few, how do we ensure that real water needs are not compromised by speculative profit motives? Global household water requirements are miniscule compared to water use in industry and agriculture. Even more miniscule by comparison are the water

consumption rates of poor households in Africa. In light of this, how realistic is it to suppose that women in African countries might stand a chance in negotiating rights over their meagre water needs?

One aspect of water biopolitics is the trade in virtual water. Virtual water is the amount of water embedded in food produce and other products through their production. For instance, producing one kilogram of wheat requires about 1,000 litres of water. In other words, there is a virtual flow of water out of the producing country that needs to be factored into the export of crops or commodities. In some instances, industries are literally draining away local water resources. The Lake Naivasha area in Kenya, for instance, is home

Electric pumps are used to draw water from Lake Naivasha to irrigate the farms, and this is threatening the lake's very existence

to huge flower farms that export their produce to lucrative European markets. Electric pumps are used to draw water from Lake Naivasha to irrigate the farms, and this is threatening the lake's very existence (O Ogodo and J Vidal, 'The African paradise ravaged by roses', *The Guardian*, 14 February 2007).

'The human census in 1969 showed just 27,000 people living in the surrounding areas. Today, the population is nearly 300,000, and security guards patrol the few paths left open for local people and animals to get to the lake. Naivasha, officially 130 square kilometres, shrank last year to about 75% of its 1982 size, and the great papyrus swamps that were the breeding grounds for fish have been largely cut down. The undulating hills around the lake have few trees left' (O Ogodo and J Vidal, 'The African paradise ravaged by roses', *The Guardian*, 14 February 2007).

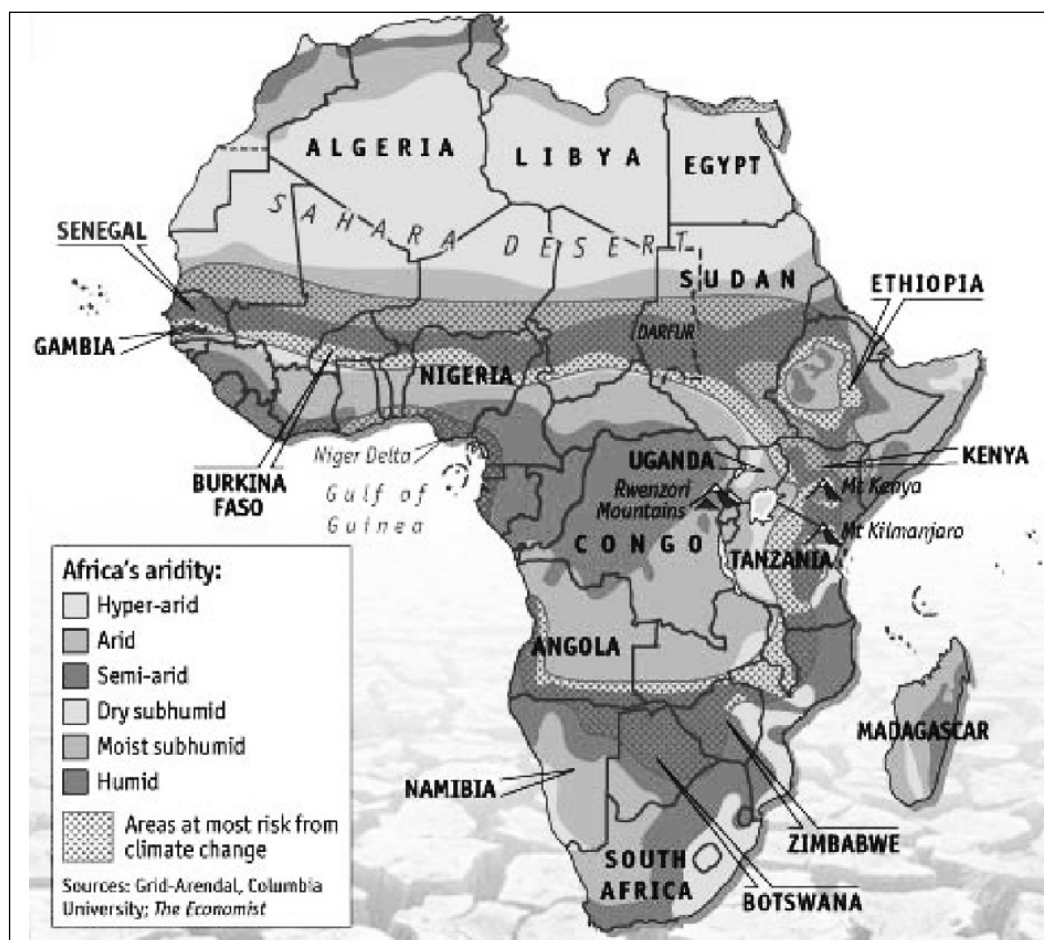
According to conservationists and ecologists, the

lake could be little more than an African Aral sea – a turbid muddy pond – in about 20 years time. The most visible changes to the lake in the last 30 years and the cause of much of its problems are the giant sheds and greenhouses of more than 50 major flower farms that line its shores and the settlements of people who have flooded into the area since the global flower industry moved in. Naivasha is now Europe's prime source of cut flowers and, to a lesser extent, vegetables, which are grown on more than 50 square kilometres of land around the lake in the open and under 2,000 hectares of plastic (O Ogodo and J Vidal, 'The African paradise ravaged by roses', *The Guardian*, 14 February 2007).

Britain imported 18,000 tonnes of flowers from Kenya in 2005, nearly twice the amount it imported in 2001. There are no publicly available figures for how much water the companies extract from the lake but they are conservatively estimated to take at least 20,000 cubic metres of water a day on average. A combination of climate change, which is increasing the severity and frequency of droughts, and the over-extraction of water is now stretching the lake to its limits. 'Last year, we could walk right into the heart of the lake through the mud. We are literally watching over the lake as it makes its last kicks', said a security guard at one of the biggest flower farms (O Ogodo and J Vidal, 'The African paradise ravaged by roses', *The Guardian*, 14 February 2007).

Sometimes the virtual drain of water is less obvious. In Varanasi, India, for instance, a community-led movement is now in its fifth year demanding the closure of the local Coca-Cola plant which continues to further deplete an already dangerously low water table (India Resource Centre, 2007).

Another aspect of the biopolitics of water is geo-political. Water basins are often shared between different countries (Leonard, nd). Water does not follow political boundaries, but political boundaries quite often are drawn along water



Source: *The Economist*, 12 May 2007

lines. Africa has the greatest number of rivers that cross or form international boundaries than any other continent. Ten river basins flow through 33 sub-Saharan countries and Egypt.

Few of the trans-boundary river basins in the region are effectively jointly managed.⁶ Effective management would require treaties, political commitment, institutions, capacity, information and finance. Over the past decade, international river basin management protocols have developed, including the Southern Africa

Development Community Protocol on Shared Waters, the Niger Basin Authority and the Lake Victoria Fisheries Authority. However, river basin authorities as yet have no legal framework for ensuring equity in access to and accountability for water supply and water quality management. Diversion projects continue with the justification that those who use the most water deserve the biggest share.

Those of us who witnessed the impacts of 'economic structural adjustment' in the 1980s

will recall how long it took before Western donors and the established aid institutions understood that structural adjustment should, after all, have a 'human face' and that this human face was primarily a woman's face. Is there a parallel to be drawn here?

Current economic models based primarily on privatisation strategies do not include accountability in terms of meeting peoples' basic needs. How can we ensure that the 'wide lens' view of scientists and meteorologists, of planners, policy makers and politicians and of investment capital and grant funds focus also on the immediate 'human face' of climate adjustment – those on the ground, at the pumps, in the fields, those caring for the young and feeble?

Gender, poverty and water vulnerability

Women make up 70% of the world's poor. Their vulnerabilities are further accentuated by race, class, ethnicity and age. When natural disasters and dramatic environmental shifts take place, women and men are affected differently because of their different social roles, responsibilities and access to support. In Zambia, for instance, women and youth contribute 70% of agricultural labour, but they have little access to productive assets and are marginalised in the decision-making processes at both the household and community levels. These gender differences become more acute when productive resources are eroded, making female- and youth-headed households the most vulnerable of the rural poor (Government of Zambia, 2004).

Women are the most affected by water stress – more than half of the 1.2 billion people who do not have access to water worldwide are women and girls. In most developing countries, women are responsible for water management at the domestic and community level. It is estimated that women and girls use more than eight hours a day travelling between 10 and 15 kilometres to

transport between 15 and 20 litres of water on each trip.

Men, especially in rural areas, do not play the role of getting or carrying water. Their relation with water has more to do with agricultural work and with the storage of water. This gender-determined inequality has implications to women's daily life from a rights-based perspective, since the carrying of water not only causes them physical disorders but also makes it impossible for them to make time for education, income generation, politics and recreation. According to a report from the Women and Environment Development Organisation (2007:2),

'women use vegetation and forests for medicinal plants, food and fuel as well as for income generation, but these ecosystems rely on a healthy water supply. As the environment deteriorates, women's livelihoods become increasingly vulnerable. [...] Access to toilets has a huge impact on women; in many communities women walk a long distance to use facilities, often risking personal safety – there is an increased incidence of sexual and physical assault when toilets are in remote locations. In rural areas where toilets may be unavailable, deforestation and loss of vegetation have forced women and girls to rise earlier and walk further in search of privacy. Toilets are also unavailable for vast numbers of poor women who work in urban centres. About one in ten school-age African girls do not attend school during menstruation or drop out at puberty because of the absence of clean private sanitation facilities in schools'.

Long-term and persistent drought also impacts women more acutely. Tens of thousands of at-risk people migrate across traditional tribal and political boundaries in search of food and water in countries worst affected by drought, such as Djibouti, Ethiopia, Somalia and Kenya, where



MARIA FONT DE MATIAS, IRIN

Climate change is increasing the severity and frequency of droughts.

close to eight million people live. This migration further exacerbates existing competition over scarce grazing areas and water – provoking further inter-clan conflict, with women risking further gender-based violence.

An Oxfam (2005) report on the impact of the 2005 Asia Tsunami reported that the majority of those killed and least able to recover were women (many drowned simply because they had never learnt to swim). In Aceh, Indonesia's largest city, located in Sumatra, for example, more than 75% of those who died were women, resulting in a male-female ratio of 3:1 among the survivors. As many mothers died, there were major consequences with respect to infant mortality, early marriage of girls, neglect of girls' education, sexual assault and trafficking in women and prostitution (Oxfam, 2005)

Adjusting to climate change

Climate change has occurred several times in our recent history. It has happened frequently, with long-term effects and with flora and fauna changing as a result. People's living patterns 6,000 years ago and in the 20th century, for instance, contributed to conditions necessary for sea surface temperature (SST) to cause dramatic land conversion in North Africa. According to the IPCC (2007), a combination of factors – including vegetative cover, soil moisture and SST – best explains the ancient and modern droughts of the Sahel and the desertification of the Sahara. Those living in semi-arid regions develop coping strategies and local knowledge systems to survive through long drought periods where supplies are limited.

An International Institute for Environment and

Development (Toulmin and Hug, 2006:1) report states:

'The West African Sahel, a belt of semi-arid land lying along the southern edge of the Sahara desert, shows what "adaptation" means in practice. Since the late 1960s, the Sahel has experienced a 25% decrease in rainfall combined with several harsh drought years. In response, farmers have shifted to shorter cycle varieties of millet and maize and abandoned crops like groundnuts that need higher rainfall. Livestock have been herded further south, away from the desert margins and into settled, cultivated areas where a new accommodation between animals and crops must be sought. Wells have been dug and small dams built to provide for gardens of onions, tomatoes and mangoes for sale. Many farmers have also moved southward, seeking land in better-watered areas. Since the late 1960s, five million people from Burkina Faso and Mali have migrated south to neighbouring Côte d'Ivoire. Much of the civil strife there today stems from the uneasy relations between incomers and local people and the growing shortage of land in a region where it had formerly been considered in endless supply.'

What is vital to understand is not the *degree* of climate change that we should expect, nor necessarily the impact that we might anticipate on water resource management, coastal defence, food security, species survival, etc. What is important to grasp is that we *do* have the ability to adapt and adjust to the changes that climate change will bring, and often it is communities at the frontline of change and a direct relationship with the land who adapt first. It is less a question of when and more a question of how and who. IPCC (2007:18) makes the following observation:

'Sustainable development can reduce vulnerability to climate change by enhancing adaptive capacity and increasing resilience. At present, however, few plans for promoting sustainability have explicitly included either adapting to climate change impacts or promoting adaptive capacity. On the other hand, it is very likely that climate change can slow the pace of progress toward sustainable development, either directly through increased exposure to adverse impact or indirectly through erosion of the capacity to adapt.'

The emphasis then is that 'sustainable development' means that we need to be proactive and deliberate about focusing on the adaptive capacity of societies to respond to climate change. Policymakers and practitioners alike have a responsibility to ensure that any work with community organisations on rural development and infrastructure issues, resource management issues and development policy in general should be built on efficient use of conservation information and knowledge, on proven risk management practices and on sharing local experiences and lessons learnt. It is an ongoing dialogue.

This is easier said than done, especially as women are so often excluded from the mainstream dialogue. Considerably more investment of time and money is needed to support comprehensive workshop-based, peer-to-peer meetings, to invite more women to explore the issues on their own terms.

'I will transform my lifestyle in the way I farm and think'⁷

Organic farming workshops held for small-scale farmers (all women) in the Caribbean region are one example of adaptation. These hands-on customised training programmes accompany the introduction of codes of good farming practice with specific modules on the links between agricultural practices, land conservation and disaster management.



PIERRE HOLTZ, IRIN

Women use vegetation and forests for medicinal plants, food and fuel as well as for income generation.

As in many countries, women in this region play a vital if under-recognised and unsupported role in food production.⁸ They have less access to land, extension training, affordable credit and loans than men. By implication, women have less opportunity to negotiate or act upon their concerns in the food production sector at the policy level. At the same time, research indicates that women are not only responsible for up to 65% of day-to-day farming and 80% of marketing decisions, but they also demonstrate and articulate a growing interest and commitment to more holistic farming methods, not least because they have already experienced first-hand the damaging effects of synthetic fertilizers and pesticides, and they are very concerned about their families' health and well-being.

The agri-food sector plays a critical role in preserving rural landscape and contributing to sustainable rural development. The European Union (EU), for instance, has introduced regulations which require farmers to 'apply usual good farming practice' to qualify for certain EU funds. Good farming practice involves nutrient management planning, protection of water, good grassland management, compliance with animal welfare and hygiene standards, proper use, handling and storage of pesticides and chemicals and the protection of wildlife habitats.

In designing the Caribbean organic farming workshops, the organisers⁹ took the decision to host a workshop in Grenada, a country that had already suffered the impact of hurricane damage but that also had successful organic farm practice

examples to study. During field trips, women farmers saw for themselves the value of growing organic crops in a variety of ways. Apart from the management of soil content and water storage and collection, the participants could observe how cocoa trees grown in the shade of mango trees were protected from damage from hurricane winds.

Discussions were held at every juncture throughout the workshop. Over the course of the week, participants were able to draw the links between their individual actions, their collective activities and the political, trade and agricultural contexts they work in. They recognised the potential impact of their local decisions on national, regional and international developments, including food policy and trade.

The fact is that women are often faced with real and immediate choices and decisions without all the information at hand

Through hands-on internet training, they realised that they are members of a worldwide movement that flourishes beyond their immediate communities and that shares the same goals and visions. They engaged in broader discussions around intellectual property rights issues, the World Trade Organisation's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) and the implications for organic growers. By the end of the workshops, the farming women had a comprehensive and balanced perspective on their capacity for managing and influencing change, both in their fields and at the national policy level.

The fact is that women are often faced with real and immediate choices and decisions – such as how to allocate water resources between agriculture and livestock or whether or not to use GMO¹⁰ seeds in farming – without all the information at hand. It is striking how many myths, misconceptions or misinterpretations abound. In other words, information packages provided to women need to

be comprehensive, holistic and contextualised within the framework of both environmental changes and the current trade regime.

Women as primary managers of change

There are a good number of field studies documenting women's particular problems with accessing water, how reducing the time women spend collecting water will free them up for other activities from farming to education to political involvement and how grassroots and indigenous women's movements are working to renegotiate natural resource rights in their favour. What are the real water risks for women if they are *not* in control of change?

- Further costs will be imposed directly on women for their water uses, which is made more acute by the increase in female-headed households in sub-Saharan Africa¹¹;
- Women will continue to be compromised into other commercial activities to 'earn' water access (including selling food meant for the household, selling forest wood, engaging in prostitution activities, criminal activity);
- Women will continue to bear the brunt of managing water shortage implications, including increased incidences of domestic violence because they are unable to bring enough water home and migrating to other areas;
- Women's involvement in water policy decisions will continue to be minimal or non-existent;
- Where women are able to influence water policies, these will remain sporadic, incidental, piece-meal and localised;
- Women's ability to protect existing water sources will be weakened.

A southern solution

Importantly, to effectively face the global aspects of the biopolitics of water, women need to be able

to build solidarity with each other, locally as well as with their national governments. In particular, women need to engage to:

- Help resist pressures to turn land and forests away from the food needs of the people towards the production of export crops or bio-fuels because of pressure to sustain a pattern of elite consumption in developing and developed countries that is clearly unsustainable;
- Build solidarity to vigorously pursue the provision of Global Public Goods (GPGs), but also vigorously resist pressure to open up National Public Goods (NPGs) to global corporations. The NPGs include, for example, the provision of water for household use, energy and electricity for national enterprises, education at all levels, indigenous knowledge and cultural expressions;
- Help build capacity to negotiate with Western providers of technology and investment capital. Here, the successes of grassroots organisations need to be drawn upon;
- Help build capacity to negotiate terms of the World Trade Organisation and related regional trading fora.

Technological and financial solutions to these problems are secondary. The core solution lies in building alliances, supporting dialogue and enabling women to determine their choices, priorities and 'ways of doing and being'. While incremental changes are being made, these are still patchy and not systemic – women continue to be left out of the decisions around resource allocation. Women want to influence the decisions that affect the lives of their families and communities as well as their political and economic environments. Women need to be better informed but they also need to have their own information, experiences and ideas valued and organised into voices for change.

Too many policy or aid decisions that impact

women are made in a non-participatory, top-down, one-directional way. There is a high risk that with the new attention to climate change, policy and aid will once again go the way it always has, and women will once again be left with the responsibility of managing local change but without the required resources.

The recently published UNECA (nd:8) report makes the following statement:

'The Vision calls for a new way of thinking about water and a new form of regional cooperation. At the regional level, it calls for partnership and solidarity between countries that share common water basins. At the national level, it will require fundamental changes in policies, strategies and legal frameworks as well as changes in institutional arrangements and management practices. *It will necessitate the adoption of participatory approaches, management at the lowest appropriate level and the mainstreaming of gender issues and the concerns of the youth.* At the global level, it will call for assistance from Africa's development partners in mobilising seed funding for priming the urgent developments needed to underpin sustainable management of the region's water resources. Above all, it will require adherence to the following critical success factors:

- Openness, transparency and accountability in decision-making processes;
- Ability to generate and receive knowledge and information;
- Cooperation and teamwork by all countries in the region to achieve common, mutually beneficial objectives;
- Readiness to take tough decisions on the future direction and course of action consistent with the aspirations in the shared water vision;
- Proper appreciation of 'where we are',

‘where we want to be’ and ‘how to get there’;

- The adoption of financing and cost-recovery methods that are equitable and sustainable, while reflecting the concerns of the poor;
- Political commitment and grassroots support’.

Poverty is more often about the lack of voice and influence and less about a lack of wealth or resources. When women can articulate their needs and concerns, when they can push for change that addresses their priorities, then, and only then, will they have reason to be hopeful.

Notes

- 1 Water security is the reliable availability of an acceptable quantity and quality of water for production, livelihoods and health, coupled with an acceptable level of risk to society of unpredictable water-related impacts. Implicit in the notion is the idea of a minimum platform of water infrastructure and institutions (Vogt, 2006).
- 2 In Bolivia, Ghana and Nigeria, grassroots movements are successfully reversing the two-decade trend of selling key public utilities to global firms.
- 3 ‘Difficult’ hydrologies are those of absolute water scarcity and, at the other extreme, low-lying lands where there is severe flood risk. It also encompasses areas with markedly seasonal rainfalls – with short seasons of torrential rains followed by long dry seasons requiring the storage of water. With increasingly difficult hydrology, water security and the level of infrastructure and institutional investment become significantly greater than in more temperate and less variable climates.
- 4 Water stress results from an imbalance between water use and water resources. Water stress causes deterioration of fresh water resources in terms of quantity (aquifer over-exploitation, dry rivers, etc) and quality (organic matter pollution, saline intrusion, etc) (Vogt, 2006).
- 5 The biosphere is the film of dry land, water and air enveloping the planet earth within which all life exists (see Rifkin, 1991).
- 6 In 2002 the African Union established an African Council of Ministers on Water (AMCOW) to create necessary political leadership, policy direction and advocacy in the use and management of water for social, economic and ecological benefits.
- 7 Woman farmer’s comment made at the end of the organic and ICT workshop in Grenada, an island nation in the Caribbean, in 2006.

- 8 In sub-Saharan Africa, women contribute 60% to 80% of the labour in both food production for household consumption and sale. A survey of national sectoral reports for Benin, Burkina Faso, the Congo, Mauritania, Morocco, Namibia, Sudan, Tanzania and Zimbabwe found that women’s contributions to household food production range from 30% in Sudan to 80% in the Congo, while the proportion of women in the economically active labour force in agriculture ranges from 48% in Burkina Faso to 73% in the Congo (FAO, 1994).
- 9 Jamaica Organic Agriculture Movement and Networked Intelligence for Development jointly designed and ran regional workshops in the Caribbean region in 2004 and 2006. The detailed report on the workshop in Grenada is available on www.networkedintelligence.com/REPORT.pdf. Grenada was deliberately chosen as the workshop venue, following the devastation left behind by recent hurricanes and the opportunity that the workshop would afford local participants in drawing the links between organic farming and disaster planning and management. The workshop offered comprehensive training on the new opportunities for women-led farming businesses and start-ups within the context of the growing demand for organic produce and products. Thirty participants came together from Dominica, Grenada, St Lucia, St Vincent & Grenadines, Guyana, St Kitts & Nevis and Trinidad & Tobago.
- 10 The acronym GMO stands for ‘genetically modified organism’ and was first used to designate micro-organisms that had genes from other species transferred into their genetic material by the then-new techniques of ‘gene-splicing’. Applied to crops, the term refers to any genetic plant type that has had a gene or genes from a different species transferred into its genetic material, using accepted techniques of genetic engineering. In a real sense, all of the crop cultivars that we use are ‘genetically modified’ in that they were bred to be more productive, more pest resistant or produce better or different quality of product than did previous cultivars.
- 11 In many countries in Africa, as elsewhere, there has been a significant increase in the percentage of female-headed households (FHH) in recent years. FHHs have a higher dependency ratio in spite of the smaller average size of the household, have fewer assets and less access to resources and tend to have a greater history of disruption (IFAD, 1999).

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NIDHI TANDON is an independent development consultant, animator and advocate for political, socio-economic and cultural transformation based in Toronto, Canada. She is also director of Networked Intelligence for Development. Tandon has a news journalist background with the Zimbabwe International News Agency in Harare and the BBC Africa Service in London. She also worked with the Women and Development Programme of the Commonwealth Secretariat and the Overseas Development Institute in the UK. Email: nidhi@networkedintelligence.com





The African Village Borehole

In the dry dusty village, Morogoro
was an only borehole providing water to a hundred families.
Women gathered there daily to fetch water.
With empty pots balanced on their heads, some with babies
wrapped on their backs, they never failed their daily visits to the borehole...

Goats and dogs trailed along longingly for the cool water.

The village women named it – their Heaven – a temporary respite from the
burning fields and the never-ending chores in the homes.
The rhythm of the flowing water and the comforting
clanging of the water pump handle, lulled babies to sleep;
some time for relaxation, chatter, laughter...

Men came with added intent, to woo the wife to be.

Sheaves of leaves placed on the filled vessels to prevent spilling
On stiff necks, outstretched arms and elbows, precious water ferried home.
To prepare sadza and relish, to wash and clean.
And if they could race the setting sun, before
darkness enveloped the sky...

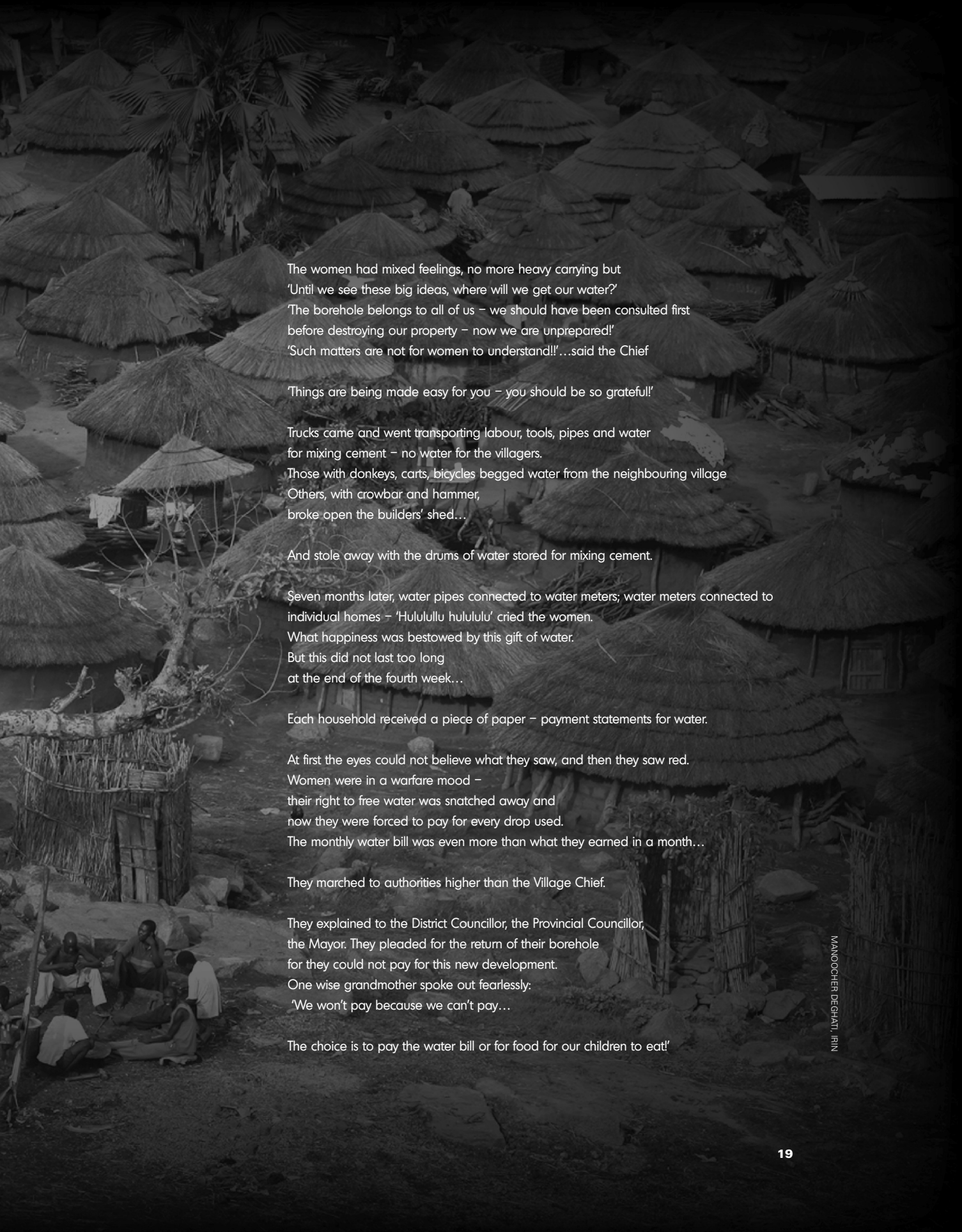
They could prepare some local brew for sale to the men.

Then one starless night, a
Thunderous explosion
filled the still air, the crickets and frogs froze
No one dared to stir out of their homes, children drew closer in their sleep
Until the roosters crowed their plucky cries in the dawn's light...

The villagers discovered their borehole, blasted. The women cried in anguish.

Nooooh, not our borehole! Where will we get our water?
'What has become of our borehole?' they asked the village chief
'A rich white man, from distant soil, bought the land and rights to the borehole
He will set up a modern system piping water to your homes.
This will be a great improvement to your lives. No more fetching and carrying...

You just turn on the tap and out the water flows!



The women had mixed feelings, no more heavy carrying but
'Until we see these big ideas, where will we get our water?'
The borehole belongs to all of us – we should have been consulted first
before destroying our property – now we are unprepared!
'Such matters are not for women to understand!!'...said the Chief

Things are being made easy for you – you should be so grateful!

Trucks came and went transporting labour, tools, pipes and water
for mixing cement – no water for the villagers.
Those with donkeys, carts, bicycles begged water from the neighbouring village
Others, with crowbar and hammer,
broke open the builders' shed...

And stole away with the drums of water stored for mixing cement.

Seven months later, water pipes connected to water meters; water meters connected to
individual homes – 'Hulululu hulululu' cried the women.
What happiness was bestowed by this gift of water.
But this did not last too long
at the end of the fourth week...

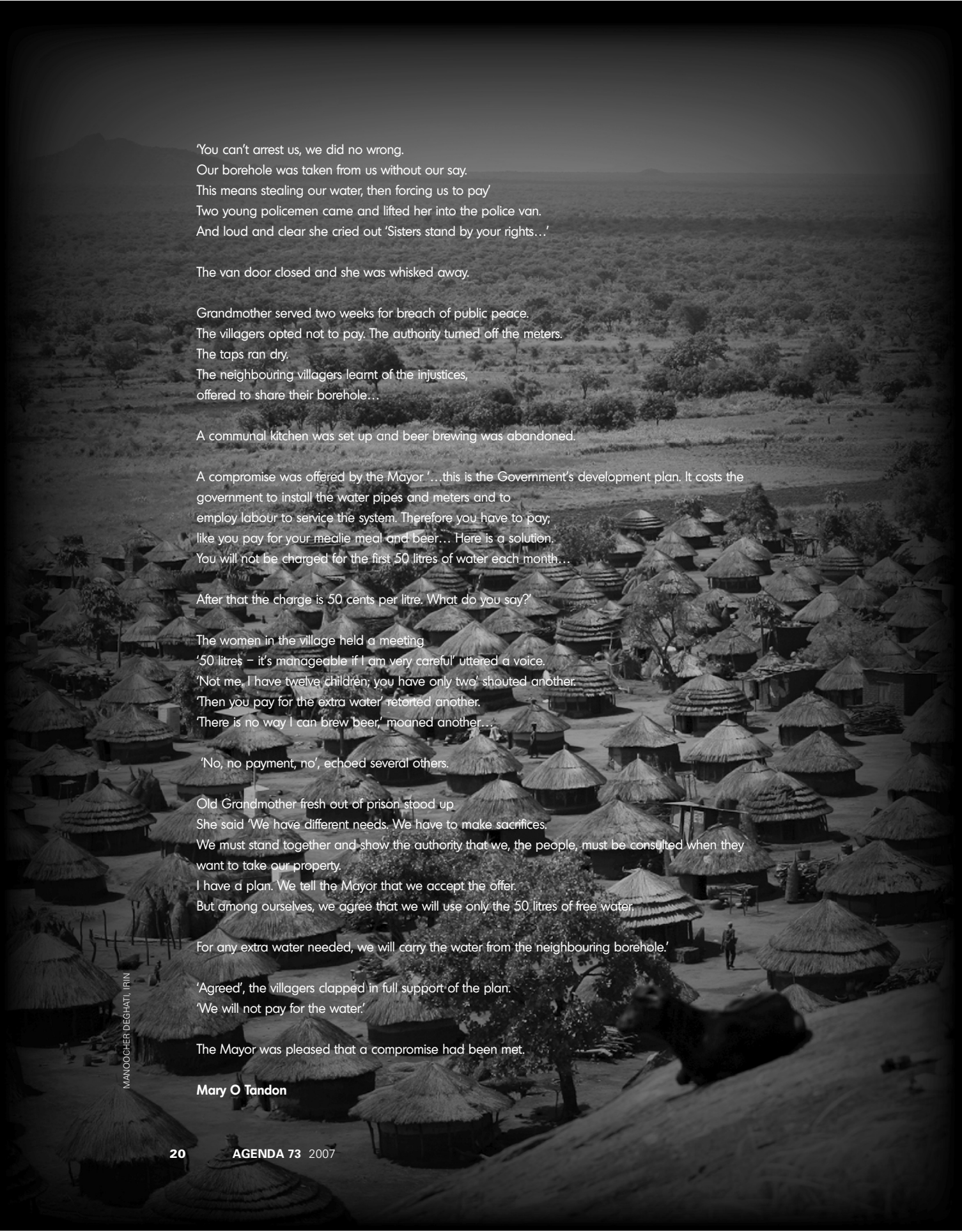
Each household received a piece of paper – payment statements for water.

At first the eyes could not believe what they saw, and then they saw red.
Women were in a warfare mood –
their right to free water was snatched away and
now they were forced to pay for every drop used.
The monthly water bill was even more than what they earned in a month...

They marched to authorities higher than the Village Chief.

They explained to the District Councillor, the Provincial Councillor,
the Mayor. They pleaded for the return of their borehole
for they could not pay for this new development.
One wise grandmother spoke out fearlessly:
'We won't pay because we can't pay...

The choice is to pay the water bill or for food for our children to eat!



'You can't arrest us, we did no wrong.
Our borehole was taken from us without our say.
This means stealing our water, then forcing us to pay/
Two young policemen came and lifted her into the police van.
And loud and clear she cried out 'Sisters stand by your rights...'

The van door closed and she was whisked away.

Grandmother served two weeks for breach of public peace.
The villagers opted not to pay. The authority turned off the meters.
The taps ran dry.
The neighbouring villagers learnt of the injustices,
offered to share their borehole...

A communal kitchen was set up and beer brewing was abandoned.

A compromise was offered by the Mayor '...this is the Government's development plan. It costs the government to install the water pipes and meters and to employ labour to service the system. Therefore you have to pay; like you pay for your mealie meal and beer... Here is a solution. You will not be charged for the first 50 litres of water each month...

After that the charge is 50 cents per litre. What do you say?

The women in the village held a meeting
'50 litres - it's manageable if I am very careful' uttered a voice.
'Not me, I have twelve children; you have only two' shouted another.
'Then you pay for the extra water' retorted another.
'There is no way I can brew beer,' moaned another...

'No, no payment, no', echoed several others.

Old Grandmother fresh out of prison stood up
She said 'We have different needs. We have to make sacrifices.
We must stand together and show the authority that we, the people, must be consulted when they want to take our property.
I have a plan. We tell the Mayor that we accept the offer.
But among ourselves, we agree that we will use only the 50 litres of free water,

For any extra water needed, we will carry the water from the neighbouring borehole.'

'Agreed', the villagers clapped in full support of the plan.
'We will not pay for the water.'

The Mayor was pleased that a compromise had been met.

Mary O Tandon