

**Clean
Rivers
Trust**

Charity Registration No. 1037414

QAT
(*Catha edulis*);

**CHEWING WHILE A NATION
THIRSTS.**

**An Enquiry into Aspects of Growing the
Shrub and its Relationship to the Water
Supply of Yemen.**

Harvey Wood.

**A Supplement
Relating to Aspects of the Use and
Social Position of Qat in Yemen Today.
(Including Notes on its Sustainable
Future Cultivation.)**

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The third in a series celebrating 20 years of research and making waves.

The original publication to which this is a supplement was published in June 2010. That document may be e-mailed on request or as a bound document that may be purchased from the Trust. Either form may be ordered by contacting the Director (hwoop@aol.com).

Clean Rivers Trust has visited Yemen in 2010 and has plans to develop an outreach arrangement with the Yemeni Government and people.

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Introduction.

The original document; 'Qat (*Catha edulis*); Chewing While a Nation Thirsts' was published in June 2010. This document outlined the main issues that are raised within Yemeni society with regard to the cultivation of this crop and the part it plays in the country's chronic water supply shortage.

Since the publication's appearance the Trust has visited Yemen and met with several senior officials and Ministers in the Ministry of Water and the Environment and the Ministry of Agriculture. These meetings have allowed greater insight to the administration of this country and the multifarious problems and concerns that hamper the administration from carrying out many administrative tasks that in other parts of the world are considered routine, to the development of alternative methods of creating a water and agriculture action plan to and a sustainable and fiscally secure future for the nation. The main brake on much development within the infrastructure of the nation is the lack of 'creative capital' that would allow for a more relaxed attitude to the agricultural and water supply issues that at present are at odds with each other.

It was pointed out, by the Ministry of Water and the Environment, during the visit that 93% of water used in the country was used for agricultural production, 5% was used for potable supply and the remaining 2% was used for industrial purposes. This group of percentages are not good reading to anyone with respect for the Yemeni or Yemen itself. There are though answers that could be put in place that would demonstrate the country's ability to double and, in the timeframe of five to ten years, increase water availability to the population by up to 30 fold. This is possible without limiting present agricultural production of qat.

Whilst in the country, I was able to talk with many people, both qat chewers and not. I found that there was a national unity brought about by the general approbation and criticism by the international community of the use of this herb as a recreational pastime by banning or controlling its use. This governmental negativity by outsider countries; that have mainly proscribed qat as an illegal substance in their own lands, though in most: it is unlikely to be even found available; due to the plant's inability to be stored successfully for more than a matter of a few days at most. Transporting qat in a viable, marketable and chewable condition around the country for distribution is an achievement in itself; worthy of only the better commercial

carriers, such as DHL or Royal Mail in the UK. Like all civilised countries, Yemen does not enjoy criticism from other countries, particularly those that have not dissimilar concerns of their own, but including alcohol and 'hard drugs which can have many more impacts on their own societies.

It is true that with a large proportion of the Yemeni population living on, or below, the poverty line it is of great concern that any substantial element of a family's income is spent on pleasure, rather than the staples of life, but there has to be some accord, allowing international acceptance of the situation for a nation that is contending with political malcontents, separatists, banditry and international terrorism all at one and the same time.

This short supplement attempts to put the case for an acceptance of the status quo with regard to qat and its place in the society of Yemen. Whilst at the same time outlining a positive change in horticultural practice that, if developed, would produce this shrub; with the reduction of at least 40% in water use and a substantial reduction of water wastage. The issues of virtual water are touched upon, as are the possible high-value low water crop alternatives to qat production that are being considered by the Yemeni Ministry of Agriculture.

International Legal Standing.

Qat is considered by most European, North American and Pacific governments to be a drug that is proscribed as illegal. The seed is, though, readily available via the internet as a horticultural curiosity. The seed, mainly originating from South Africa, is distributed from the UK. There appears to be no ethnic predominance within the seed trade whereas the fresh shoots imported from Ethiopia by air, are consumed almost exclusively by members of the East African and Yemeni communities. Due to the rapid nature of modern air freight handling, London is the centre of distribution; both to the rest of Europe and the USA.

In Britain there is no imminent plan to legislate against qat; though there are calls from some European countries for this situation to change; some Somali community leaders have also requested a ban. Across the European community, France, Germany and Poland, amongst most others, have banned qat totally, whilst the Dutch government has banned its active constituents, cathine and cathinone, which are classified as hard drugs; the natural plant though is legal. In Norway qat is banned, as it is in Switzerland; Canada and the USA, New Zealand and Australia have banned qat as a stimulant. In New Zealand any qat tree planted prior to 1998, when it became illegal, need not be destroyed but its leaves may not be harvested. In Australia individuals can get certificated by the Therapeutic Goods Administration to import up to 5 kilograms at a time monthly for 12 months. The certificate then needs renewal and it is restricted to personal use only. Just over 200 annual permits were issued in 2003.

The British medical journal 'The Lancet' has published articles supporting the anti- legislation lobby in the UK, stating in articles that qat is, as a substance markedly, less harmful or addictive than either tobacco or alcohol.

The legal view of qat consider it as part of an ethno-cultural tradition of longstanding: some estimates suggest between 2000 years and 700 years old. Unfortunately for Yemen drugs generally constitute an area of western concern due to the live issue of poppy farming in Afghanistan. The destruction of poppy farming as a project is not running to US and NATO plans and the international market for opiates is far harder to challenge than the qat issue in Yemen. If drugs were not part of the 'War against Terror' the qat tradition would be a likely candidate for international protection.

International Donor Nations.

Yemen is fortunate that there are several members of the international community who supply fiscal aid to develop a twenty-first century infrastructure within the country. There are apparently few international assistance workers of experience but there are several consultants that international donors place in the country to advise the donors and their advice is passed to the Yemeni government.

The Trust understands from representatives of the donor nations, many of whom are uncompromising with regard to qat and other water issues, which these communications state the medium- and long-term goals that Yemen needs to achieve. The fact that these observations are obvious is not lost on the home government's officials.

Clean Rivers Trust see that the donor countries' views are to the needs of the country and are correct; the Trust will offer advice and supply best practise illustrations and guidance to aid the ministries' planning for the plethora of infrastructural developments that will need to be put in place over the next years.

The need for a commitment to extract both best practise and value for money is an important requisite of this work, so safeguarding externally generated funding. The term 'more bang for your buck' comes to mind.

Initial Solutions.

Qat production at present is grown using the traditional method of flood irrigation that has been the standard method of watering crops in Yemen from earliest times. When the country originally used this method the water supplies were rainfall dependent, which worked remarkably well. Now this form of irrigation is no longer rain fed and is reliant on ever deeper borehole groundwater resources. This though has-and there is ministerial will-to change.

The simplest method of irrigation is the spot, trickle or point system. This is the most economic in water use, but installation costs are naturally higher than using the generations-old infrastructure of terracing that is in place today. The capital outlay is not prohibitive, though when considering the gains that should be achieved in cutting water consumption.

This method requires a reservoir or tank set on high ground to establish the pressure required to operate the system. The tank contains the water that is fed through plastic hoses to the bases of the qat tree; the pipes would be best covered by soil so as to protect them against damage from sunlight or animals. The surface of the ground beneath each shrub should be mulched and/or covered with polythene sheet, so as to catch evaporation from the soils and feeding that condensate back to the roots of the plant. By so doing this allows that the only water to be lost, to atmosphere, should be by bio-transference; through the plants metabolism, and not from the surrounding soils. The sheets of polythene need to be held down firmly using old tyres or other weights. The aesthetics and function of such a scheme can be improved by a layer of soil to hide the sheeting and protect it from the sun; so preventing its rotting and breaking down rapidly and avoiding wind blown plastics pollution and mitigating the chance of animal ingestion.

The pipe work need only be standard hose-pipe and connections being Y junctions secured with jubilee clips. There are specialist tape or nozzle feeder ends that enable control of the amount of water discharged to each subject for watering. The time of day that the irrigation is administered; is also important to avoid excess evaporate stress, the hours of darkness and the coolest period of the day, allowing the shrubs to quench their tissues without the physical trauma of direct heat and swelling of the limbs of the plants.

There have been no saline irrigation trials carried out on qat; this should be considered as a line of research.

Alternative Cash Crops.

Qat is the best selling of all the cash crops available to farmers, particularly of the upland regions of the country. The Ministry of Agriculture are exploring the possibilities of establishing new cash crops, such as olive, coconut, almond and other nut/seed crops that produce value-added products such as oils.

There are concerns on the part of Clean Rivers Trust: firstly the Syrian olive trials did not prove as successful as was anticipated; the Syrian olive industry has a number of production problems themselves (World Olive Oil Council 2009) secondly, whilst Oxfam is sponsoring a major drive to

develop a Palestinian olive oil industry, the Italians are developing the crop in Pakistan, other countries around the Mediterranean are looking for investors in developing olive oil: there is on the internet sites urging consideration of the development of vehicle fuels, such as ethanol from the expected glut in the future. There needs to be a careful consideration with regard to large scale crop developments in Yemen, and an awareness of the world markets.

There are several other developments that Yemen may consider as short term cash crops, such as grape juice concentrates and specialist niche brands; pharmaceutical values of *Catha edulis* might also be explored.

Clean Rivers Trust is producing a short guide to this subject that will be published before the end of 2010.

Virtual Water.

The issue of virtual water: that is water expended on crops elsewhere in the world that are then imported into Yemen.

This is an issue that has divergent supporters: those that believe that the staples need to be imported, others that consider water-needy vegetables and soft fruits should be a major constituent of these imports, the third view being that qat should be imported. This option would allow for regulation and the ability to raise taxes on the crop that could be ploughed back into developing new crops and supporting farmers in the transitional period of crop deployment.

This is an area of research that Clean Rivers Trust will cover in a 'briefing paper' before the end of 2010.

Long Term Strategies.

Yemen has many problems; a great many of which are related to both water and agriculture, particularly the production of qat. There are many positive elements to these concerns, the main being that the government is aware of these problems. There is a willingness to look towards adopting different practices in growing and husbanding the present national crop make-up; there is also an enthusiasm for develop new crops and harvesting practises with-in the Ministry of Agriculture.

The Ministry of Water has many complex developments to handle: establishing water basin strategies, establishing the water industry's infrastructure. It is also at the forefront, in the movement for change regarding water supply and sanitation and developing stakeholder management and responsibility. These tie into the agricultural strategy and national responsibility.

The donor nations are not looking to the future with over optimistic views, they do have to accept qat as part of the national culture and not put pressure to regulate its use; these do need to work with, and round, its use.

Yemen is putting much effort into developing a wide diversity of income streams that will allow a greater independence of its own future.

The country is working to develop fresh international business; the development of fresh exploration areas for oil and gas, the research development of geothermal technologies, mineral development and consideration and encouragement of tourism (the Al-Mukalla Tourist Summer Festival 2010); several nationals from other Arab nations stated whilst in Yemen that they considered the country was a destination of choice.

In Conclusion.

The Trust has learnt much from its introduction into Yemen, it has also realised how little we know or understand about this country and its peoples. One thing is certain that there are solutions to many of the country's concerns available for sustainable development in country. There is an enthusiasm and realism that gives great confidence for the future; the combination being unusual.

Clean Rivers Trust undertakes to provide information and whatever support a small organisation is able to supply. Plans are being developed to allow for a further visit in the near future.

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