

Clean Rivers Trust

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Fruit and Nuts? Alternative, High Value Crops For Yemen.

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Information.

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

The subject of this short document outlines some of the options and concerns that the Trust puts forward to the Government and people of Yemen.

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Introduction.

In Yemen, a land that is both modern in its attitudes to communications technology and at the same times its very tradition is part of its everyday life, it is the constant expectation that the past is around the next corner. Simultaneously mobile phones are demanding attention as are people. This is as true in the street as it is in offices of ministers of state.

When lunchtime arrives all this changes and there is relative calm, many people find their plastic bags of qat, choose a sprig and start to chew.

There are no social boundaries with the enjoyment of qat. All chewers are equal and only the quality varies. The custom is near universal and partaken of by between 70% and 80 % of the population; for many it is a daily ritual, much anticipated.

This shrub is also the biggest earning crop for the farmers of Yemen and at the same time the thirstiest water user in the country with 40% of the nation's water supply used to produce this crop. Agriculture generally takes up 93% of the supply and the population and industry having to share the rest; 5% and 2% respectively.

The populace are calling out for more and better volumes of water; a 5% drop in water use by the agricultural sector would double the public supply; further reductions would allow an ever better society that did not feel restricted by water 'famine'. There are areas such as around the city of Taizz that have running water for only one day in every thirty.

The methods used by the agricultural sector of society are in most instances traditional horticultural irrigation methods that involve flooding the lands that have been terraced to allow rainwater to be managed and steered through the crops. Now over half the water used is not rain-dependent supplies, but sourced from deep aquifers. These are being over used and there is a need to change the practises of irrigation to methods that will husband these precious resources. A separate detailed paper on irrigation methods is in preparation.

This is an overview of some crops; some of which have been mentioned by the Ministry of Agriculture and Irrigation, at recent meetings (July 2010). Such crops have several reasons for their consideration, including: satisfying

donor countries that Yemen is looking to produce other high value crops, releasing farmers from their dependency on qat as the main, truly high yielding, cash crop; cutting water consumption: and to produce crops that are at present high cost imports and/or lucrative exportable commodities.

A concern with over-abstraction of deep aquifers, particularly in the coastal regions, is risking saline intrusion of the fresh water aquifers so rendering them of little use for human consumption or much crop production. There is some hope where this has already occurred as there has been much research carried out into rice culture in saline environments, this is briefly covered in a forthcoming appendix.

Products.

Apart from qat; the most lucrative of crops in Yemen, the crops of fiscal choice for farmers are grapes, mangos, and other fruit. A widely grown herb is the sesame plant that produces a popular pomade and general body oil. It can still be seen being ground in the Old Town in Sana'a by camel-driven stones. Every day of the working week stalls are set up on the road sides in the capital and other towns and villages with fruits of all descriptions and many to a European eye are unrecognisable. Yemen is well set on a new course for agrarian change.

This change is needed so as to allow the country to export some of its agricultural production to earn the country foreign currency; much of the staples that feed the cities are not home produced and the area of developing exportable produce would also be gratifying to the donor nations who are helping the nation through these critical times. The qat growing industry is only for the internal market due to the restrictions on its marketability by the international community Other countries close by: Djibouti, Ethiopia, Sudan and Kenya only tolerate the shrub and its use if it is home grown, the large market in Somalia is near impossible to export to as it is a country with no structure and no likelihood of honouring business agreements at present. The trade with London, not a large market, is supplied by Ethiopian exports, as is the Dutch.

There has been much work carried out with Syrian expertise to develop olive production with the proposed fruits likely to have been used to make olive oil. This scheme, if not failing, has come to a halt, most likely caused by there being problems internally within the Syrian home production program. Another nut and oil source, the coconut, is raising some expectations nationally; it is covered in the ensuing text.

The Japanese, one of the donor nations, have suggested several other seed/nut plants these are also examined in the text of this paper. These include almond and pistachio; they also recommend olives.

There are other crops covered in this paper that are drought resilient and capable of producing crops without much aqueous input; it does need to be stressed that all crop bearing plants need some moisture.

The grape vine has been cultivated for over three thousand years in Yemen, long before the Sabar civilisation. Prior to the foundation of the Islamic Faith, there is evidence, that there were many vineyards within the country that made varieties of wine by fermenting grape juice. Today grape juice (and other fruits juices such as mango) of the non-alcoholic variety, are produced in large volumes; there is also a buoyant home market for dessert grapes.

There is scope in this area of agriculture to consider the branding of such grape juices by region, and quality, as do the French with their wines and viniculture. Products are awarded an 'appellation:' a token of authenticity. The niche markets that are developing, world-wide, are targets for such Yemeni quality assurance and marketing.

Many fruits are dual crops, such as tamarind, where there is both a natural paste and a bean which are harvested from the same pod.

Fruits.

Fruits of great variety are available to the farmers of Yemen; the selection and quality of that is seen for sale on many of the streets of cities and towns across the country.

The main fruits that are grown include dates, melon, mango, banana, papaya, coffee and grapes.

The Grape Vine (*Vitis vinifera*).

Preamble.

The French Government in the 1850s collected together 1,400 varieties of this plant and then ceased the project due to lack of space in the Luxemburg Gardens in Paris. This collection was stated to be only a moiety of those in cultivation in France at that time. As this shows there is an unknown number of varieties, many that are likely to be unique to Yemen.

As already stated in the text, this fruit is grown across the whole of the agricultural estate of Yemen and highly successfully.

As also previously stated this crop has the potential to be marketed as a niche product across the world as its history and pedigree, as one of the original areas of its cultivation, this can be utilised to demonstrate the sustainability and robust qualities that it possesses.

Product.

For fruit juices the need for excessive watering declines from that of the dessert fruit, also allowing a longer period on the vine so as to develop each variety's true flavours (variety 'Syrian' does not fully mature till December). As in wine producing countries such as France irrigation is not required and vines can survive and flourish in an exceptionally arid environment.

The grape seeds that are considered a waste product as are the skins in the juice extraction process are a suitable raw material for the production of grape oils, used for culinary purposes.

Time Scale.

The vine once planted takes two years of nurture before a useful crop can be harvested. During the initial two years, the strengthening of the vine and its root structure is time consuming and backbreaking toil.

Soils.

The vine is tolerant of most soil types though it is best to avoid a chalk substratum as this can lead to chlorosis (an iron and manganese causing a yellowing of the leaves, leading to die back).

The soil ideally having a pH of 6.5 to 7.

The soils should be deep and very free draining otherwise land drainage may have to be employed. Ideally vines should be planted on southern facing slopes, so as to get the benefit of the full amount of exposure to the sun.

Reason for Inclusion.

This is an established crop in Yemen that is only mentioned in this document so as to draw attention to a more valuable marketplace for one of the country's pre-eminent crops.

Coffee (*Coffea Arabica*), Dates (*Phoenix dactylifera*).

Pre-amble

Coffee is a crop that has been in production in Yemen for at least 700 years; the port of Al Makha gave the world the name Mocha for the drink of coffee. It was the original port that exported the first coffees to Europe and started the fashion that has never ceased to develop.

The humanitarian agencies do not recognise coffee as a significant export at present. It is also difficult to establish the ground area of its production.

Dates are a long term crop that is a recognised export commodity. It would appear that the country imports much of the home market supplies from Saudi Arabia; at Ramadan in 2009 the tradition of breaking the daily fast

with dates was severely limited (Yemen Times September 2009), as the price of these imports had, more than doubled.

Reason for Inclusion.

Coffee is included here because; although an export of the country, it is not where it should be: in the top twenty worldwide producer countries, Coffee appears to be under marketed. Yemeni coffee and its marketing have to be improved; since returning from the country (August 2010), considerable effort has been expended to trace a supply in the UK, but with only negative results. The Fair Trade organisation, when contacted, was even unsure if coffee was grown in Yemen.

The Coffee Growers Association Website, although still showing up on the World Wide Web is moribund: with no news or contact facility.

The date trade in the country is similarly placed and would appear to be equally inactive. It appears that the majority of Yemeni dates are marketed as 'Arabic' or lost in produce from more than one country.

Many dates are sold after the removal of the seed stone; this can be used as a source of oil that has been reported to have medicinal properties and uses with regard to treatment of skin melanomas (2010).

Coffee and dates, are both crops that should be developed for their own sake, as Yemen Brands which should be an accepted source of excellence.

Figs (*Ficus carica*).

Pre-amble.

Figs are grown in Yemen; in 2007; 445 hectares were in production. They are a popular fruit for home consumption, both as fresh fruit and as baked in fig rolls: as enjoyed at the Ministry of Water and Environment. The fig is the most mentioned fruit in both The Quraan; 'a fig tree grows in the garden of heaven'; the fig is one of only five fruits mentioned (the others being olives, dates, pomegranates, and grapes). In The Bible; the fig tree is identified as provided man with his first clothing.

Figs have a reputation of medicinal use [according to Abu Darda, someone presented figs to the prophet Mohammed (God's blessing and peace be upon him) and he began distributing it amongst his followers. He said 'eat it as it cures various diseases'], as well as having many culinary uses.

Product.

Figs are a fruit growing in popularity across the world, good quality product attracts high market prices, £1.10 (\$1.30) each in the UK (June 2010).

The fig can produce up to three crops a year under the right growing conditions: an ability to produce crops that almost equals qat in frequency.

Fig oils have many markets beyond that of the laxative: many multinational companies market the oils as essential oil or in cosmetics.

Time Scales.

Figs take 4-5 years to reach economic fruit bearing condition; the crop will then increase exponentially with the size of the tree.

The pruning and cordon training of the trees growth; both allow for development of good fruit production and ease of harvest; as does root restriction. This also allows for removal of sucker growth that can limit fruit production. The suckers may be effectively used to develop new stock at little or no cost to the grower.

Soils.

Figs will grow in almost any, very free draining, soil. Restricted root grown trees will need more irrigation than those that have free running feeder root systems.

Reason for Inclusion.

The fig can be used to satisfy many different markets as with the other commonly grown fruits in the country.

Peaches (*Prunus persica*) and Apricot (*Prunus armeniaca*).

Pre-amble.

Peaches (2,360 hectares), and their down less skinned mutant the nectarine are grown in several parts of Yemen as are apricots (730 hectares).

Product.

Peaches and apricots have several uses that are common; jams and jellies as well as dried and fresh fruits. They are prone to suffer rot if not treated carefully: transportation and storage are recognised problems of large scale exportability. Both are also used in high quality fruit juices and 'smoothies'.

The stones of the fruits are both used in the production of oils with many uses and as essential oil retails in the UK at about £3.50 (US\$4.66) per 100ml.

Time Scales.

Yields of these fruit can vary enormously, depending upon the size of the tree and its habit or style of growth. A fan trained peach can produce 30 pounds of peaches, whilst a bush can be expected to produce between 30 pounds and 100 pounds of peaches. Apricots produce about half the weight of peach trees of similar size and age.

Both peaches and apricots will start producing marketable quantities of fruit at about five years of establishment.

Soils.

Peaches require a loam and limestone based soil with good drainage and little water apart from during the fruit setting period. A soil pH 6.7 – 7 is ideal. Where as apricots require a free draining, but water retentive, soil with a more alkaline soil matrix with a pH of between 6.5 and 8. Light sandy soils are not suitable.

Reason for Inclusion.

Though grown in Yemen, there appears to be no mention of the extraction of oils in the literature with regard to the fruits grown in Yemen.

Quince (*Cydonia oblonga*).

Pre-amble.

The quince (not the oriental quince *Chaenomeles app*) is an odd shaped fruit that takes its Latin prefix from a description of its form. Unlike its oriental relative it is thornless and of a contorted nature in its growth. The first few years of life the main body of the plant needs support until the main trunk develops the strength and vigour to support its own weight.

Product.

Quince production takes up 231 hectares of agricultural land in Yemen. The yield is in the region of 1,250 tonnes of fruit.

The products that are manufactured from this fruit are mainly jellies, marmalades and preserves; the raw residues can be transformed into oil that is at present much sought after.

When picked the fruit need to be stored separately away from other fruit as their aroma will affect the flavour of other crops.

Time Scales.

The quince takes around two to three years to establish itself and develop a fruiting habit. The yield initially is small, but grows with the plant. Pruning needs to be carried out for the first four years; thereafter little needs to be done, except to keep the form of the plant tidy and remove suckers (which can be potted up to develop stock plants).

Soils.

Quince grow and crop successfully in nearly any soil; though the best fruit require a deep, fertile and free draining, though water retentive, soil.

Reason for Inclusion.

The fruit is a rare fruit on the world market and prices though fluctuating are overall increasing, particularly with regard to finished products.

Citrus Fruits.

Pre-amble.

The orange, grapefruit, lemons and limes can be and are grown in Yemen (principally oranges); though not in great numbers. The opportunity to develop the citrus production culture in the country would complement that of mango producing areas of the country.

Product.

Citrus crops are all popular in their many fresh and processed forms: juices, cordials, jams and creams. The waste products may be transformed into oils for the cosmetic industry; the final residues can go towards the development of soil conditioners.

Time Scales.

All citrus trees can be grown from seed and are able to bear economic crops with-in 4 to 5 years. As with most fruit trees and bushes, they benefit from pruning and good husbandry in their first few years of growth.

In early life trees may throw up vertical shoots that sap the plants vigour and restrict fruiting ability; these are known as water shoots, that need to be removed.

Soils.

Soil type is not critical with any citrus plant.

Reason for Inclusion.

The country imports oranges when more could be grown where other crops may be problematic.

Mango (*Mangiflerra indica*).

Pre-amble.

Mango is a popular juice product in Yemen as well as a fresh fruit. There have been concerns for the future of part of their growing area expressed by the Ministry of Agriculture and Irrigation. These concerns are a mixture of untreated pollution use and saline intrusion of the tater table.

Product.

The product is well known; both as a fruit and a juice.

There is a growing market for oil from the kernels (research carried out in Congo 2008-9); this research has shown that the cosmetic industry is extremely short of this commodity, the reason its short supply lies elsewhere which is extremely rich in unsaponifiable matter.

Reason for Inclusion.

The country grows mangos over 23,436 hectares which suggests that there are a large number of kernels that at present go to waste that could produce a second income stream.

Tamarind (*Tamarindus indica*).

Pre-amble

Tamarind is a very useful tree.

Product.

The paste that surrounds the seeds in the pod of the tree is a valuable culinary ingredient; with a good price. The full value is uncertain as it is much adulterated before the international market place receives it.

Tamarind is used to deepen the colour of some henna dyes, it is used to deepen the colour of some Indian spices and is a developing culinary oil for both dressings and cooking sauces, similar to olive oils.

The tamarind is a popular fuel wood which burns with a fierce heat and is used in some areas in India to fire brick kilns as it is consumed slowly and hot; so reliable.

Tamarind leafs are an excellent source of fodder for all livestock.

Time Scales.

Propagation can be by seed, cutting or grafting. Cuttings and grafting can allow for surety of viability of tree quality, unlike seed which is not so certain. A good quality pod and care of seedlings though, may allow for cheaper and equally productive trees in the long run.

In a matter of four to five years the tree will be producing marketable crops.

Soils.

Tamarind can grow in any soil as long as it is deep and free draining. It will grow happily up to a height of 2000 metres above sea level.

Reason for Inclusion.

Tamarind is a very valuable weapon in the battle against desertification and deforestation; it is a good soil stabiliser that pays its way time and again.

It gives value from all parts of its being: which gives it fiscal similarities to qat.

Other Fruits that are Tolerant of Draught.

There are several fruiting trees that are extremely draught hardy; two are named below, with notes of their habits and values; where available.

Florida hog plum (*Ximenia Americana*, grows in poor, sandy or rocky soils. Grows to 10 to 25 feet, sprawling zigzag nature, spinney, if pollination is good, (Yemeni bees and their honey?) large volumes of red semi-sweet, plum like (1 inch long) fruit. The flesh surrounds a woody seed, its outer is brittle and contains a fatty kernel (similar to pistachios), edible but can have a purgative effect. Oil has as yet no known use. Propagation is by cuttings or

seed. Plants bear fruit after three years. A relation of the sandalwood (*Santalum ellipticum*), which it resembles in having a scented wood.

Red Mobin (*Spondias tuberosa*). Originally from Brazil. A low spreading tree, extremely drought tolerant; develops roots systems of swollen tuberous appendages that act as water storage (up to 3,000 litres of potable water per tree). Slow to fruit, up to ten years. Once fruiting starts, yields can be heavy; up to several hundred kilos per harvest, per tree. The fruit is a 4cm plum like fruit with a large kernel. The fruit is used for juice and fruit paste; the kernel may be used as a cosmetic oil. Preferred growing medium is a fast draining soil of poor fertility, can be used to develop reforestation.

Nuts.

In this section concerning nuts; the first crop described, is the olive. In Yemen, olives are consumed as a culinary fruit, though its main value is in the pip, or stone, which is the source of olive oil, the universally respected culinary essential ingredient.

The other nuts are those recommended by the Japanese Embassy, further examples have come to the fore during research.

Olive (*Oleaceae europaea*).

Pre-amble.

The olive is a staple of southern European and Mediterranean cuisine, which has been commercially grown for at least 3,000 years. There are known sites of groves that produced olives and pottery that was used to store their oil from before the beginning of the first Greek empire.

Olives are one crop that the Donors to Yemen have all expressed a support of being developed in the country; major trials were undertaken in the early 2000s with the assistance of Syrian expertise. The project foundered although over 700,000 trees are reported to have been planted. Many searches of the World Wide Web have been carried out; but no serious report as to the reasons for the scheme failing appear on-line.

The internet, though, does shed light on concerns for the Syrian home production of olives. These include estimates of declining production also diseases are alluded to. There are references to Italian technical assistance.

Italy is also providing assistance in Pakistan with regard to developing commercial olive groves, mainly in the North West Frontier Province.

The Donors are enthusiastic for olives, as oil is a high price commodity. The reality is that olives are being developed across the world: Australia, Brazil, Argentina, Peru, Mexico and South Africa, all these are new growers. Morocco, Algeria, Tunisia, Libya, Turkey, Lebanon, Jordan, Egypt and Syria are all advertising and actively recruiting investors so as to double or quadruple each country's production. Oxfam are championing Palestine in developing olive culture.

Syrian olive production by area has dropped by several hundred hectares in recent years.

Both Italy and Spain are looking at inferior quality olive oils as alternatives for powering engines. This is a concern as there is a reasonable price even for pomace oil at present.

Product.

The two products are well known as olives as fruit and the several qualities of oil that are derived from the different pressings of the stone; extra virgin to pomace.

The waste material at the end pressing can be used in anaerobic digesters with other agricultural waste to produce heat and/or energy; leaving a soil improving residue at the end of the process.

Time Scales.

Olive trees bear their first fruit at about four years, but are slow coming into economic fruit production at ten; but they will then crop for many tens of years with little pruning required.

Soils.

Olives are tolerant of most soil types; and acidities from pH 4 to an alkaline pH 8.

During the setting of seed they need some moisture to aid the process; they do not tolerate their roots being flooded or waterlogged. The olive is a plant that will tolerate slight salinity in its irrigation water: as much as 6,000 ppm of salt has no adverse effect on olive oil fatty acids, fatty acid location in other important physiological components.

Reason for Inclusion.

The reason for inclusion being that there are concerns, already expressed, regarding the long term economic viability of the olive.

Sweet Almond (*Prunus dulcis dulcis*), and Bitter Almond (*Prunus amara*).

Pre-amble.

Another of the Donor nations' preferred crops, especially the Japanese.

Almond is of the same genus as cherry, plum, apricot and peach.

Product.

The almond either sweet or bitter is a financially popular crop at this present time. The kernels, once removed from their shells, can be blanched, roast/toasted or left as a natural product. There are many uses for this product in confectionary and baking. The oils are of growing popularity and the world prices reflect that.

Oils are another crop use that is of developing interest.

Time Scales.

The almond takes around three to five years to become established and present a first crop. The crops will develop proportionately with the maturity of the plant.

Soils.

Soils are important for almond propagation and growth; it needs to be free draining but water retentive, if the growing medium is too sandy crops will not develop as desired, such land would need to be developed to a more fertile loam. There is need for moisture and cold winter weather at the fruit development time as the change from flower to juvenile olive takes place.

Reason for Inclusion.

The nut was popular with the donors; it is not an ideal subject for crop development outside the areas where it is already established. Yemen grows 4,700 hectares of almonds.

Cashew Nut (*Anacardium occidentale*).

Pre-amble.

This nut is also described as a cashew apple, though it is a false fruit. The 'apple' that develops between the nut and the branch to which it is attached swells as the nut grows to provide protection for the nut. This swelling is also harvestable as a fruit by-product that is nutritious and palatable.

The nut was first brought to Asia by the Portuguese to stabilise the lands around their colony; Goa in India. It has proved itself as an extremely draught tolerant plant that has a very valuable and popular fruit and nut.

Product.

The nuts are known around the world and have many uses from plain nuts to toasted and roasted. The oils are used in industry, gastronomy and cosmetics.

The apple growths can be sold as fresh fruit, juice, preserves and paste.

Time Scales.

From planting to initial economic production takes, if well managed, only two years and yields develop as the plants prosper.

Soils.

A well drained sand, loam or even drained clay soil will produce good and reliable fruit crops. The plant likes an acidic soil of as low as pH 5.5 and as high as pH 7.

They enjoy a climate that has rainy and draught periods; allowing it to dispense with irrigation. The temperatures they require are; no frost, though temperatures as low as 10 centigrade day temperature and will thrive with temperatures as high as 40 centigrade.

Reason for Inclusion.

This plant has many plus points to its nature and on exhaustive inquiry into any failings; none were found, except they need to be cared for; so that crops are satisfactory.

Coconut (*Cocos nucifera*).

Pre-amble.

A tall single stemmed palm, often leaning, with the prevailing wind. A plant of tropical coasts. It grows best in tropical regions with a high humidity.

Product.

This palm has many uses, including: oils for culinary, cosmetic, pharmaceutical and animal food; other products include copra, copra meal, sisal and other fabric.

Time Scales.

The coconut palm takes up to ten years to acquire maturity and then produces several crops a year.

Soils.

The soil needs to be light and free draining, though with a good humus content.

It does best in soils with a pH of 7.

Reason for Inclusion.

This plant has a number of admirers located in the Ministry of Agriculture.

Pecan (*Carya illinoicensis*).

Pre-amble.

A nut originating in the US and Mexico,

Likes dry winters and springs, wet summers and dry autumns.

Rats and birds are a problem as the nuts are popular with both; good husbandry is needed.

Product.

The pecan is a nut with a growing future, in Australia production is growing by 10% per annum. The worlds market out strips this agricultural sprint to keep up.

There are several different cultivars from which the nuts and oils from all are in demand.

Time Scales.

Once planted, an economic harvest can be expected: after four years of careful husbandry.

Soils.

The pecan is not fussy with regard to the soil it is grown in; best production is achieved on deep sandy, free draining loam. There is a need for a reasonable amount of humus to retain moisture and nutrient.

Reason for Inclusion.

The pecan is a plant that produces a commodity that is scarce and commands a good price.

Macadamia (*Macadamia integrifolia* and *M. tetraphylla*).

Pre-amble.

This is another crop of desire worldwide; the oil and nut are both growing in popularity.

Product.

Nuts command a high price, the imperfect or reject crop can be turned to oil. The husks can be turned into soil improving compounds.

Time Scales.

They are slow growing but will produce good crops after five to six years.

Soils.

Soils with a pH of 7 to 8 are satisfactory. Free draining sandy loam. Moisture is needed at the time of fruit setting. Dry winters are preferred.

Reason for Inclusion.

This nut is in its infancy within the international market place. It can live with the natural weather patterns of Yemen.

Other Crops.

Lavender (*Lavendula angustifolia*).

Lavender is a plant of little rain and very poor soils. It has been grown in many parts of the Mediterranean where nothing else will.

Over many hundreds of years the oils of lavender have been valued by the perfumeries. The world market can not be met so prices are constantly growing.

One disadvantage is that it does require careful husbandry and nurture throughout its growing season.

Rosemary (*Rosmarinus*).

Rosemary is a shrub that needs little if any water or care, excellent for clawing back land from desertification and at the same time producing one of the major scent oils of the world.

It is also marketed as flavouring for foods an essential oil for the cosmetic industry. There are also markets in the pharmaceutical sector as well.

In Conclusion.

The Donor Countries wish for Yemen to consider developing alternative crops of high value rather than the continuing and increasing production of qat.

There are several that have already been covered in this short paper.

There is great hope for the future, though the continued production of qat cannot be avoided. Qat is so imbedded in the culture of the country and it would be seen as unacceptable to just cease its production.

There are many crops that will increase wealth and increase the export potential of Yemen.

There are two caveats: farming methods, particularly harvesting will need more care than is seen in many crops at present, the other being that the development of the crops should be mirrored by an increase in marketing internationally.

Dr Harvey Wood. 27th August 2010.

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