... ಪೂರ್ಣಮ್ ପୂର୍ଣମ പൂർണമ് പൂർണ്ണമ് ਪੂਰ੍ਣਮ੍ ପୂର୍ଣମ୍ ପୂର୍ଣ୍ଣମ୍ ପୂର୍ଣ୍ଣମ୍ ପୂର୍ଣ୍ଣମ୍ ...

पूर्णमदः पूर्णमिदं पूर्णात् पूर्णमुदच्यते ।
पूर्णस्य पूर्णमादाय पूर्णमेवावशिष्यते ॥

Pūrṇam

A Journal of Indian Knowledge Systems

(Website: https://purnam.vercel.app, https://purnam.ac.in)

Portraying the attempts of scholars and scientists……..

……. to understand the contributions of Bharatiya Heritage and SAINTists™

Pūrṇam Vol. 1 No.2 July - December 2025 Pages: 5 – 15 ISSN: 3049-3587 (Print)

Patrons' Research

Evidences for Indian Propensity for High Agricultural Yield

D. K. Hari, D. K. Hema Hari

[Founders, Bharath Gyan, Patrons: Pūrṇam; Email: bharathgyan@gmail.com]

Abstract

Looking at the old British records of high yield in Bharat, before the British rule in India and comparing with world averages today, one is wont to wonder if such high yields are possible and whether besides the records of the British, are there other ways to ratify and confirm India's propensity as well as success in having achieved such high yields in the past. Such questions have been posed to the authors multiple times.

Such a doubt warrants clarification as such thoughts can lead to undermining and disbelieving the potential of self and the nation, to achieve. This paper has been produced in response to such a need.

Keywords: Agricultural Yield, British documents, early travelogues, food production chain, government taxes

The food providing chain

Annadātā sukhī bhava

Food in most Indian languages is called '*Anna*'.

In India, Food is held in high reverence. It is common practice to thank the food giver by saying, *"annadātā sukhī bhava"* before a meal. *Annadātā*, means the one who provides food.

We broadly relate an *annadātā* to the host or the lady of the house who cooks the food or going back further, to the farmer who grows the food grains. When we think deep on the subject we realize that the food that is served in our plates comes from a chain of *Annadātā*.

The chain begins with

- the micro-organisms which provide nutrients to the soil.
- the earthworm which aerates the soil
- the bullocks that plough the soil
- the farmer who plants the crop and looks after them till they are harvested
- the trader who ensures that the grains reach us wherever we are and finally
- the one who cooks and serves the food with love and care.

At the next level, for a land like Bhārat, the food on our plate is possible only if there are sufficient water providers and those who take care of the water bodies to ensure that the fields are irrigated and get sufficient water to grow the crops.

Going further up in the chain, are those who safeguard the land, the people and their yield and protect them from danger of all sorts – manmade and Natural calamities.

Without all these 3 layers putting in their best, it would be difficult to ensure consistent production and supply of food for all across a nation.

Wishing well for the *annadātā* chain

Thus, from the micro-organisms to the earth worm, to the cattle, to the farmer, irrigator, trader, cook and those providing security to all these, all serve as a part of the *annadātā* chain. Each one in this chain should be happy for this chain to be sustainable. This is what we pray when we say *"annadātā sukhī bhava"* before our meal.

All these efforts and all these prayers had not gone waste as this land of Bharat has been a land of abundance from millennia ago.

The annadātā chain links which ensure we get out food – right from micro to macro levels.

Evidences for a good food chain and abundance in India

From the Vedas

Let us look at the evidences in Vedas. The Vedic literature does not speak from the perspective of a poverty ridden society. The examples in the Vedic literature clearly indicate an advanced state of agriculture, metallurgy, trade, welfare and defence.

For example, there are mentions of systematic strengthening of river embankments and development of irrigation canals from the rivers, in connection with agriculture:

- The Maitrayani Sukta of the Rig Veda, in 3.33.3 and 4, discusses about river water flow and how to irrigate fields with the same. Verse 1.38.11 of the same Sukta, discusses about building strong river embankments.
- River embankments are also discussed in Kshetrapati sūkta of the Rig Veda.
- The Aranyani sūkta of the Rig Veda, discusses about the laying of good roads.

If a civilization could harness waters, grow food in a controlled manner and could also travel over land and seas to trade, then it implies that it must have been fairly matured in understanding science, engineering, commerce and society.

If along with all these, there are signs of well-developed arts and spirituality as we can see all around, then it implies a state of prosperity.

Ancient India thus presents through literature, a picture of a society, rich in material, cultural and esoteric wealth.

For a civilization to have reached such heights of prosperity, it is but essential that the whole civilization, for more than a few centuries must have worked in a concerted manner to have been a flourishing one.

From traveller records

It was all this food produced, the allied handcrafting, processing industries that grew around it, along with skills honed over generations, that gave India sufficient produce, to be self-sufficient and also have excess, to trade with other civilizations.

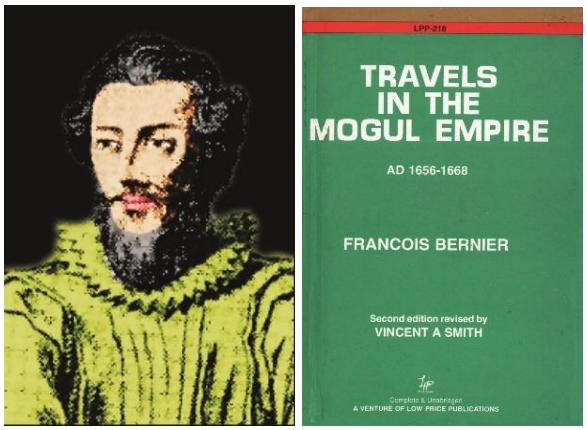
A Frenchman's Wonder

Jean-Baptiste Tavernier, a French traveller who visited India six times, between 1640-1667, writes in his book, ***"Even in the smallest villages, rice, flour, butter, milk, beans and other vegetables, sugar and sweetmeats, dry and liquid, can be procured in abundance..."***

Jean Baptiste Tavernier and his work

Richer than Egypt

Francois Bernier, who visited Bengal between 1656 and 1668 CE and wrote the book "Travels in the Mogel Dire". He described Bengal as ***"The knowledge I have acquired of Bengal in two visits inclines me to believe that it is richer than Egypt. It exports in abundance cotton and silks, rice, sugar and butter. It produces amply for its own consumption of wheat, vegetables, grains, fowls, ducks and geese. It has immense herds of pigs and flocks of sheep and goats. Fish of every kind it has in profusion. From Rajmahal to the sea, is an endless number of canals, cut in bygone ages from the Ganges by immense labour for navigation and irrigation."***



Francois Bernier and his book

This observation of Francois Bernier about Bengal, is corroborated by M.Manouchi, a Venetian.

Plenty in plenty

Manouchi was no mere traveller who had come to India to trade or learn about the country.

M.Manouchi was a physician at the court of Shah Jahan and lived with the Emperor for 40 years. Attached to Price Dara Shikoh, he had access to the original Persian chronicles in the library of the Moghul Emperor and based on these, he chronicled the History of the Mogul Dynasty, all the way from its foundation by Temurlane to Aurangazeb. Manouchi writes, ***"Bengal is of all the kingdoms of the Moghul, best known in France. We may venture to say it is not inferior in anything to Egypt and that it even exceeds that kingdom in its products of silk, cotton, sugar and indigo. All things are in great plenty here, fruits, pulse, grain, muslins, cloths of gold and silk…"***

M.Manouchi

This richness reverberated in 1900s and continues to echo even today, in the phrase, "Sonar Bangla", meaning the Golden Bengal", a land of plenty and affluence.

Golden age under the Mahratta

Auquetil Du Perron, a French orientalist and linguist, who had visited India and stayed here for 7 years between 1755 and 1761, quotes a traveller he had met, ***"When I entered the country of the Mahrattas, I thought myself in the midst of simplicity and happiness of the golden age… misery was unknown… the people were cheerful, vigorous and in high health."***

Anquetil Du Perron

Thus, India was a land of abundance with abundant varieties, abundant harvests and abundant ways to consume them.

But was the yield also abundant?

Breaking the myth about Indian yield

The way the modern agricultural scientists and economists today have been collecting data on agricultural output for the last few decades, the British administrators too, prior to taking over the administration of India, had collated similar data on the agricultural output per hectare in different parts of India. Their statistical findings are quite revealing.

East India Company Records - Information

Year CE	District	Crop	Annual yield per hectare in tons
900	Thanjavur	Paddy	18
1100	Arcot	Paddy	14
1325	Ramanathapuram	Paddy	20
1770	Chengalpattu	Paddy	9
1803	Allahabad	Wheat	7.5
1807	Coimbatore	Paddy	13
1947	All India average	Wheat Paddy	650 kgs 630 kgs
1993	Ludhiana	Wheat Paddy	4.3 5.5

East India Company Records of Food Production Across India

This chart shows us that from Ludhiana in Punjab in the North West of India to Ramanathapuram, deep down, in the South of India near Kanyakumari, the per hectare yield of crops was three to four times the yield per crop of today.

What we need to keep in mind is that today's yield per hectare is being achieved despite being propped up by abundant, nay, excessive use of chemical fertilizers and pesticides.

In the British colonial days and before, the statistics of which the records contain, the high yield then was achieved without the use of the chemical fertilizers and pesticides, just by using traditional and sustainable techniques of farming.

There was so much abundance, in India then.

So, it is a myth that agricultural yield was low in India before modern farming techniques were introduced during the Green Revolution.

It is also a myth that agriculture is a non-productive or non-profitable industry.

The way it is practiced now, perhaps it is.

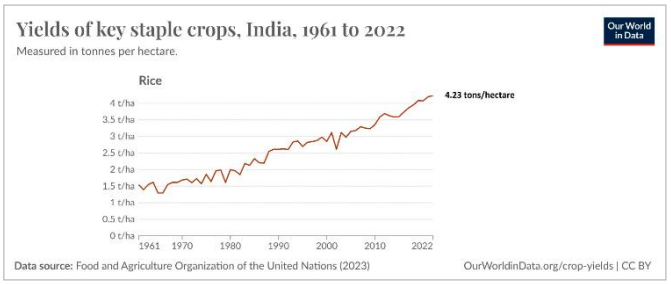
But that does not seem to have been the case earlier.

There was food in abundance. The food was in abundance because the yield was high.

Need for ratification

Today's State of Agriculture in India

The yields from Agriculture in the past seem to be hard to believe today, because despite all the modernity, progress, automation, chemical and biotech advancement that we claim today, the data on yield seems to be nowhere comparable to what existed before.



World Annual Yield of Rice – based on data sourced from Food and Agriculture Organization of the United Nations (2023) with major processing by Our World in Data (ourworldindata.org)

By the time India attained Freedom from the British in 1947, the yield had declined sharply under the various oppressive and suppressive policies of the British rule.

However, for the present generation, which has grown seeing only such levels of yield, the high yields of the past as mentioned seem unrealistic for the following reasons.

1. The data points are few and far between making them look like one-off instances or events in history.

2. The yields are expressed and compared in tons/hectare across India as well as across centuries which seems to be British measure. How and from where did the British get these values?

The acceptance of these high yields and hence giving credence to the system of agricultural practices of pre-British Bharat, hinges on clarifying these points which have been put to the authors too many times in the last few decades.

Sources for data on yield

British East India office library, Euston, London

Authentic data on India's yield in the last millennium, readable in English, comes primarily from the British records in the British East Indian Office Library at

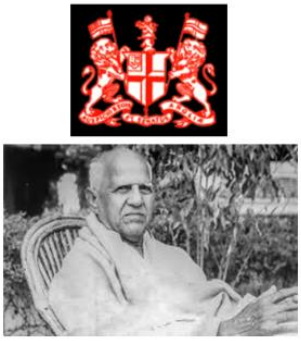
Euston, London. These were copied painstakingly by hand, record after record, by Shri. Dharampal.

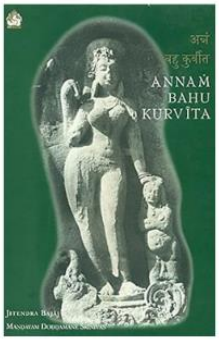
Some of the worthy works that have used these notes along with their other research in recent decades include books such as:

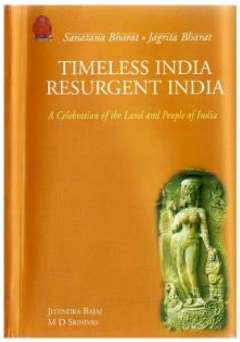
- Annam Bahu Kurvita by Jitendra Bajaj and M.D.Srinivas

- Timeless India, Resurgent India by Jitendra Bajaj and M.D.Srinivas.

Authors of this paper have also been fortunate to have had the opportunity to study these handwritten notes of Prof. Dharampal and compile them as part of their research, besides also visiting the British East India Office Library at Euston many decades ago to scour the records there for more data.

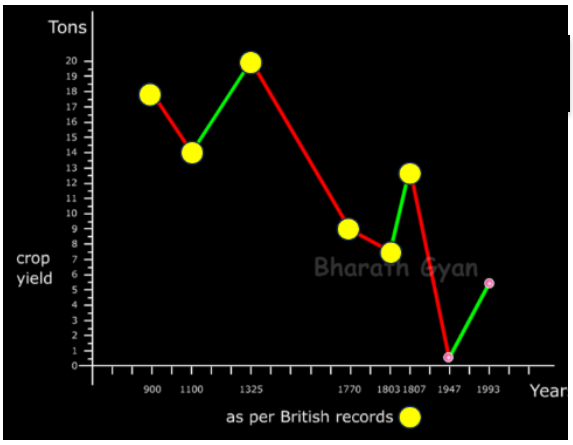






Sources for data on yields in India before the British primarily from British records

A synopsis of the yield data available is as shown below.

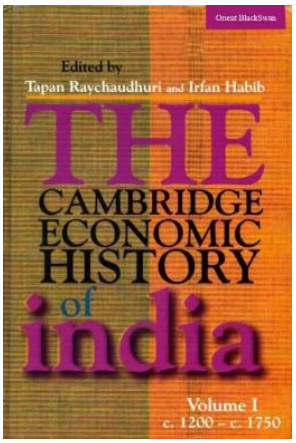


Distribution of data on crop yield in India across years

Post Independence, it has taken decades for the damage caused and the wrecked lands as well as the farming community to turn around and keep increasing the yield steadily to what this rich land and bountiful Mother Nature is capable of bestowing.

Sources of data for South India

Besides the valuable resources mentioned above, yield data as well as agricultural practices and Agricultural economy has been summarized in the valuable writings of L.B.Alaev of Institute of Oriental Studies, USSR Academy of Sciences which can be found in the compilation "The Cambridge Economic History of India - Volume I: *c. 1200-c.* 1750", edited by Tapan Ray Chaudhuri and Irfan Habib, First published in 1982.



The Cambridge Economic History of India

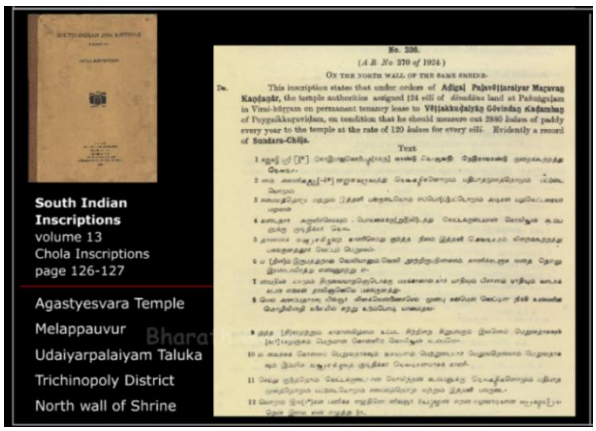
Primary sources on which his writings are based include

- Writings of Sir Francis Buchanan who has written extensively on the practices in Southern India as well as Eastern India, Nepal and parts Burma.

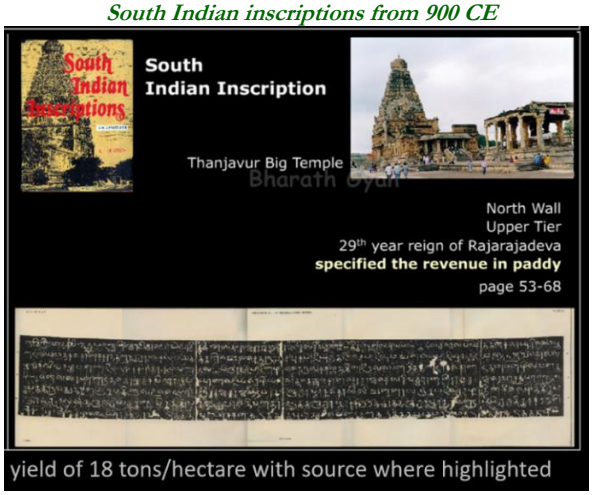
- Writings of the Portuguese Duarte Barbosa who visited Vijayanagar empire and has written extensively on the practices in the Kerala region of Kannur, Kollam etc.

- South Indian Inscriptions in Temples which contain details about holdings, donations and dues to the temple.

Presented here are some of these primary sources of data that have relevance to the yield across the last millennium. These would have served as the source of data for the British records too.



South Indian inscriptions from 900 CE



Records of Yield as cited by L.B.Alaev

The inscriptions mention the yield in the local measure as Kalam per Veli.

These inscriptions mention the tax / rent owed to the temple based on the extent of land under cultivation in amount of grains in Kalam / Veli.

Citing the standard practice for those times of tax rates being a maximum 25% of gross produce observed from other records elsewhere, the overall production from that land has been estimated at 4 times the dues and thence the average yield of that region has been calculated. Whereas, authors Jitendra Bajaj and M.D.Srinivas of "Annam Bahu Kurvita" extrapolate the gross produce as being 6 times the tax since ancient Indian ethos did not permit beyond 1/6th as taxes on food produce.

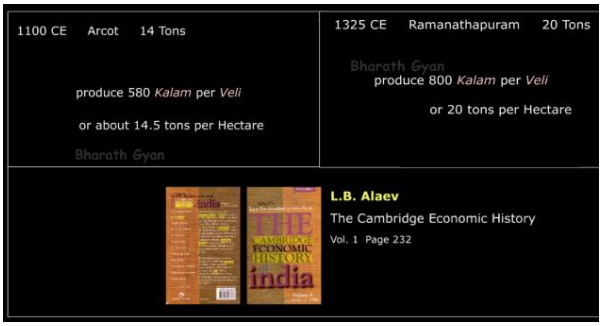
From the 969 CE inscription in Trichirapalli, the rent / tax levied can be noted to be 120 Kalam/veli. Even if we assume a higher tax of 1/4th gross and hence a lower gross produce, this would mean that the gross produce then would have been 120 * 4 = 480 Kalams / Veli.

As observed and converted by the British during their times and used by L.B.Alaev for his paper,

- 1 Veli = 7 Kani = 6.43 acres = 2.6 hectares
- 1 Kalam = 220 lbs.

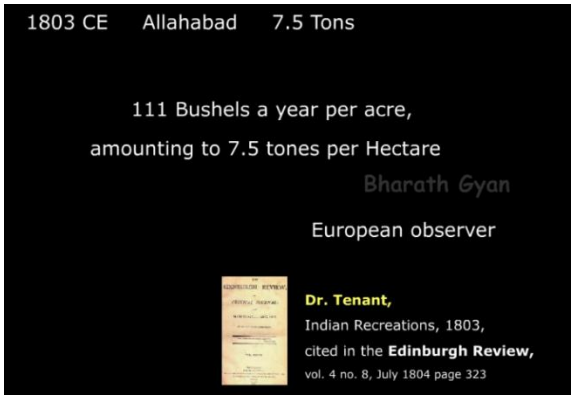
1 lb	=	0.45 kg
1 Kalam	=	220 lbs
	=	1 centner
So, 1 Kalam	=	99 kg
480 kalam	=	47520 kg
	=	47.52 ton
1 veli	=	2.6 hectare
Yield	=	18 tons/hectare

Using the differences between the measures of Kalam across regions, authors Jitendra Bajaj and M. D. Srinivas have shown how Arcot and Ramanthapuram had yields of 14 Tons/hectare and 20 tons/hectare respectively.



1100s and 1300s Records of Yield

Sources for 1700s Record of Yield



European observer source on Records of Yield in 1800s

British Administrator report on Records of Yield in 1800s

While what has been extracted from inscriptions and calculated here for Trichy, Tanjavur etc. are just a few instances, the source South India Inscriptions contains pages of text of inscriptions found across temples of South India which are full of data of the produce and taxes paid to the temples. This goes to show that the above data are not sporadic one-off records but such consistent data does exist in inscriptions and manuscripts all across the land.

Sources of data for North India

Much of the data on the state of practices and economy of Northern parts of India come from the records of Abul Fazl of the times during Akbar's rule in the work Ain-i-Akbari.

During Akbar's times, Ain-i-Akbari by Abul Fazl Allami has recorded the yield in man-i-Akbari and bhiga-i-Ilahi which are slight variations of the local measures of bhiga prior to Akbar's reign.

Man or maund is the unit for measuring agricultural produce. Maund is often represented as Md. 1 Man / Maund is also made of 40 Sers. Thus, just the way we weigh in terms of kg and gm, it was the custom during the early part of the last millennium to measure grains in terms of Man and Ser, depicted as Md. Sr.

Details of these measures can be gathered from the English Translation of Ain-i-Akbari by Colonol H.S.Jarrett.

A detailed analysis of the various measures and their conversions can also be gathered from the work of Irfan Habib, "Agricultural System of Mughal India", published first as a Doctoral Thesis in 1958 followed as a book published for Department of History, Aligarh Muslim University by Asia Publishing House, New York in 1963.

The data and translations from Ain-i-Akbari has formed the source for many of the history papers and works about India. An analysis of the same by Prof. Shireen Moosvi was published as in "The economy of the Mughal Empire, c. 1595 : a statistical study", published in 1987 by Centre of Advanced Study in History, Aligarh Muslim University, Delhi and Oxford University Press, New York as also in Production, Consumption and Population in Akbar's Times in 1973.

A comparative compilation of yields from Moosvi can also be found in compilations such as the "Cambridge Economic History of India - Volume I: *c. 1200-c.* 1750", edited by Tapan Ray Chaudhuri and Irfan Habib, First published in 1982" too, to present the state of Agriculture and Economy of North India prior to the British.

	(*man-i Akbarī* per *bīgha-i Ilābī*)		
	(a) 1540–5	(b) Agra: 1870	(c) Delhi: 1870
Wheat	12.96	13.13	12.6
Barley	12.93	12.34	10.9
Gram	10.93	7.12	9.9
Jowar	10.35	7.67	7.5
Bajra	7.62	4.23	7.2
Moth	5.16	3.56	–
Mash	7.77	3.34	–

Moosvi's comparison of average yield of 1540—5 with the average yields estimated for Agra and Delhi in 1870 – Source: Cambridge Economic History Of India - Volume I: c. 1200-c. 1750", edited by Tapan RayChaudhuri and Irfan Habib, First published in 1982.

This compilation has been used to highlight how all through Mughal rule the yield was more or less steady.

Shireen Moosvi's work was preceded by and prompted as a response to the publication of Ashok V Desai titled Population and Standards of Living In Akbar's Times, National Council of Applied Economic Research, 1972.

He in turn had followed the trend set by W.H.Moreland who had published his Agrarian System of Moslem India in 1929 on the economics in India from the time of Akbar and from his death upto Aurangazeb.

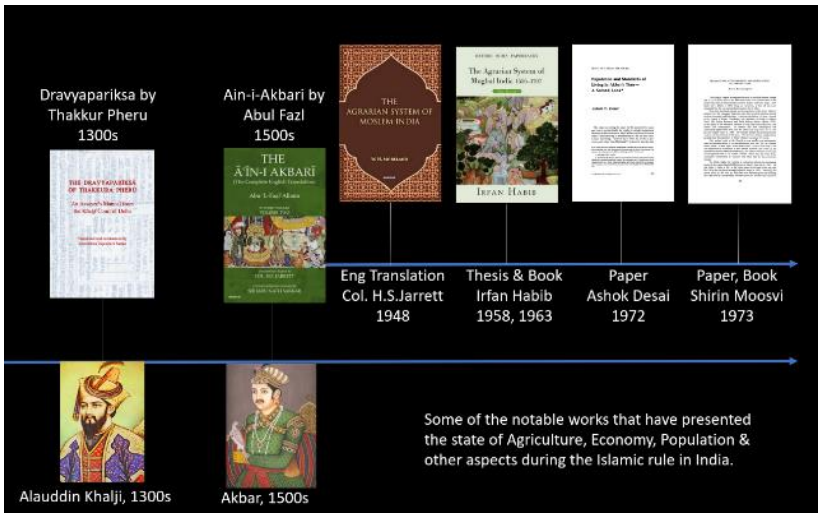
With Ain-i-Akbari forming the basis, these works have data on Indian agriculture mainly from the times of Akbar, the record of the yield prior to Akbar's times, more specifically in the times of Alauddin-Khalji can be obtained from 13th – 14th century Thakkur Pheru's records which show a stunning yield of 45 man/bhiga.

From the records of Pheru, who was employed in Khilji's mint as an Assayer, we find that, during Akbar's times itself, the yield had come down from 45 man per bhiga to 12.9 man-i-akbari per bhiga-i-ilahi as can be seen from records compiled from Ain-i-Akbari. While the units man and bigha being

compared are no doubt different, they are not expected to be too widely variant.

Thakkur Pheru, a Jain polymath of 13th – 14th century, writes in his work Dravyapariksa which has been annotated in English by S.R.Sarma, that in Spring harvest, the yield of the land was

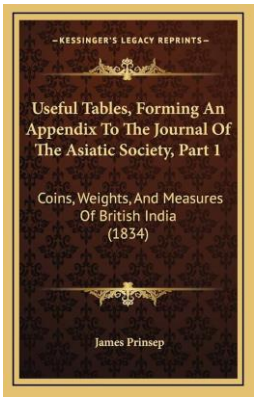
- Wheat - 45 Man per bigha
- Masur Dal – 32 Man per bigha
- Channa Dal – 32 Man per bigha.



A Summary of Various Works that Present Agriculture Picture of North India before British

Varying measures and conversion units

For the British to fathom and understand the units of measures across Bharat, James Prinsep in 1840, had compiled and published a set of tables for conversions and measures - *Useful tables, forming an appendix to the Journal of the Asiatic Society: part the first, Coins, weights, and measures of British India (2nd ed.), Calcutta: Bishop's College Press.*



James Prinsep; The Journal of The Asiatic Society, Part I

The actual weight or value of a measure *mana* in a such large land like Bharat and going back to such large time spans would naturally vary across different provinces based upon local factors. It would also vary across centuries, kingdoms and dynasties.

But, across geographies and across timespans, there is a larger consistency, which we can see, when we see it in relationship with Nature, Prakrti with topography, with hydrology, with climate and other such natural factors. This is what comes through from most of the records of practices that have been recorded over millennia by travellers as well as chroniclers.

What comes through clearly is that the yield was consistently high across the times. This means that

1. the practices were honed and consistent

2. there are inherent advantages that this land and society enjoyed.

From an overall multidisciplinary compilation of the state of Bharat across ages, one can list these advantages as –

- the land was fertile,
- climate was conducive,
- people were hardworking, healthy and had a good work-life balance,
- the seeds were hardy,
- waters were abundant,
- humidity was maintained well through the year,
- techniques of planting, ploughing, nourishing and safeguarding the crops were perfected

…. consequently leading to high yields across the lands.

A glowing example for wisdom in farming

Evidences for India's knowledge and usage of chariots and carts drawn by horses and cows/oxen over 5000 years ago, can be seen in the remains of chariots excavated in Sanauli, Uttar Pradesh. Given this, why did not Indians use such carts to plough and till their farms and instead rely on just cows and humans to draw the ploughs?

In a climate where the productive powers are so great, it is only necessary to put the seed a little way into the ground. If it is buried deeper, it would rot and decay or remain dormant, until it is brought to the surface and exposed to the vivifying rays of the sun.

The plough is the first and most important implement in agriculture, as it helps put the seed at sufficient depth, to produce the most abundant crop. This is the real and only useful test of good farming.

If we see, in the case of a rake attached to a tractor to act like a plough, while the rake may loosen the soil, the wheels of the tractor press and thicken the soil, which hampers growth.

The fundamental trait of animals such as cows, horses, deer etc. is that they are called ungulate as they have hooves for feet. Hooves are like hardened fingernails of toes and are made of Keratin-like fingernails. The ungulate animals fundamentally stand on their toes than on their feet like humans. Human feet are plantigrade i.e. are flat on the ground which serves as a stable platform and gives them more balance on just 2 feet. Whereas the ungulate, hooved animals need 4 feet to stay balanced as they are standing on tiptoes than on flat, platform-like feet. Interestingly, the ungulate means digits in limbs and is similar in meaning and sound to Anguli in Indian languages for finger or toe.

Hoof of a cow and its footprints

While this does take up more energy needed for balance, the footprints left by these animals on the mud is minimal. Not only minimal, since they walk on toes, they end up scooping the mud than pressing he mud down like flat feet or tractors do.

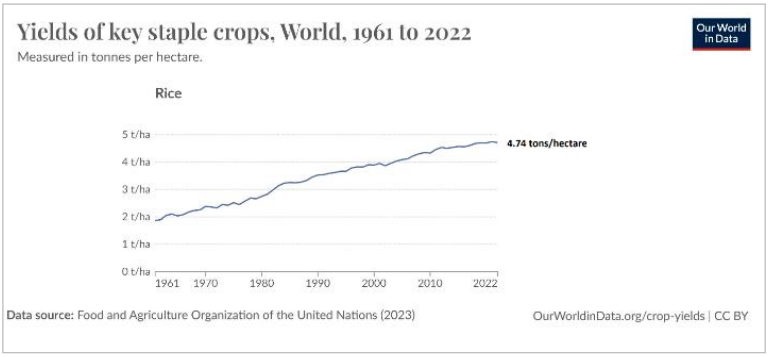
Coupled with the fact that these animals walk in such a manner that their hind legs follow their fore legs, they end up leaving a minimalistic footprint on the mud and that too one which also scoops up the mud than press it down.

Indian farming techniques had also evolved to use ploughs designed to suit the nature of the local soil. The ploughs of India were so optimally designed that they had earned words of praise from Albert Einstein too in his letter to Sir.C.V.Raman, the scientist of India. Einstein says to Raman, ***"Tell the people of India, that if they want to survive and show the world path to survive, then they should forget about tractor and preserve their ancient tradition of ploughing."***

India' continued wisdom of using cows and ploughs was also one of the reasons for keeping its soil sufficiently aired and the seeds just rightly planted to ensure a good yield for millennia until the wheels literally turned in favour of the tractor.

The takeaway message

The larger message in all this is that, various parts of Bharat were able to consistently grow food grains on a year after year basis, even in the so-called arid regions such as Ramanathapuram, to the quantities that are today worthy of being considered as world record barrier.



World Annual Yield of Rice – based on data sourced from Food and Agriculture Organization of the United Nations (2023) with major processing by Our World in Data (ourworldindata.org)

We see that the present Indian yield for rice at 4.23 tons/hectare is comparable with Word Yield figures for Rice at 4.74 tons/hectare. However, it is only a fraction as against the Indian Yield of 18 tons/hectare as found and recorded pre-British and pre-Mughal times.

Such a high agricultural yield for India primarily came from its agricultural prowess, the richness of the land and the advantageous seasonal pattern (*Rta*).

Evidence of high yields from Indian tradition

Harvests per year, a yardstick in agriculture

One harvest per year - World pattern

During the medieval times, the living conditions in Europe were very tough from many perspectives, including the climatic condition.

Europe and many parts of the world face harsh extremes of climatic conditions, making the farming season very short. This is ideal for vegetables and fruits, but not for long season staple crops such as rice, lentils, sugarcane, etc. Coupled with adverse social conditions prevailing all across Europe as well as due to lack of sophisticated farming techniques during medieval times, often only one harvest was possible in Europe.

Whereas, lands in the tropics were more conducive to agriculture.

Three harvests per year – Indian Pattern

The salubrious climatic conditions and industrious nature of the people, favoured agriculture to such an extent that 3 harvests in one year were possible and was practiced in these lands.

So much so that India had to give them distinct names, based on the season of harvest,

1. Winter as Kharif
2. Summer as Rabi
3. Autumn as Pre Kharif or Zaid, for a short crop between Summer and Winter.

All over India, a crop or harvest is referred to as *Bhog*. The word *Bhog* denotes that which is to be enjoyed. This is why food offered for the divine's enjoyment, Prasad is also called *Bhog*,

Bhog thus represents wealth - especially food and that which is produced from the land. It thus has a connotation of profit or revenue yielded by a harvest. *Moondru Bhogam* is the term used in Tamil Nadu to refer to 3 harvests. *Moondru* is three in Tamil.

In Telugu land, a similar concept is called *Moodu Pantalu* - *Moodu*, meaning three, and *Panta*, meaning harvest.

In the local literature of this land, in different vernacular languages, the capability of this land to yield three harvests, *Bhog* or *Upaj* / *Fasal* as it is referred to in Hindi, is discussed frequently.

Even to date, the term "*Moondru Bhogam*", "*Moodu Pantalu*", "*Teen Upaj*", "*Teen Fasal*", continue to be the yardstick, to measure and confirm the industrious nature of the agriculturist and the yield of his land.

The term "*Theen Bhog*" in the literary sense brings forth that this land, not only has high yield in each harvest cycle but that this land Bharat has been uniquely endowed to bring out 3 harvests a year. The harvest cycle approximately being 100 days. So, in 365 days, 3 harvest cycles were what Mother Earth offered the industrious children of the Bharatha civilization.

Proof for three harvests, three *bhog* in India

The number of harvests and time of year, depend on the local climatic conditions and monsoon window. However, each region of India has its own 3 seasons of crops and harvests, especially for staples such as rice and thus, many harvest festivals throughout the year too, to celebrate them.

Each region also has a different name for each type of grain from each crop season and harvest too. For example, the 3 rice crops across India are called by different names in different parts.

Region wise Local Names for the 3 harvests across India – Source Breaking The Myths – Vol3, About Prosperity by

Region	Winter	Summer	Autumn
North India	Kharif	Rabi	Zaid or Pre Kharif
West Bengal	Aman	Boro	Aus
Assam	Sali	Boro	Ahu
Odisha	Sarrad	Darua	Beali
Bihar / Uttar Pradesh	Agahani	Garma	Bhadai
Tamil Nadu	Samba	Navarai	Kuruvai
Kerala	Mundakan	Punja	Virippu
Andhra Pradesh	Sarava /Vanakaru	Dalwa / Endakaru	Vesavi / Edakaru
Karnataka	Mungaaru	Hingaaru	Besige
Maharashtra	Kharif	Rabi	-
Punjab	Kharif	- (since more wheat based)	- (since more wheat based)

D.K.Hari and D.K.Hema Hari

These are not cropping seasons which have resulted from adoption of modern agricultural methods and aids. These are traditional names that have come down from generations based on farming in sync with Nature and in a natural manner.

In the local literature of the land, in different regional languages, the capability of this land to yield three harvests or Bhog, is discussed frequently. Even to date, the term "three Bhog" continues to be the yardstick to measure the industrious nature of the agriculturist and the yield of his land.

Not only three harvests a year but the farmers also practiced multi-cropping which resulted in bounties of food and other agricultural produce such as cotton, indigo, spices.

Records of the British show the wide spread, high yield across the land. It is an agricultural output that is not matched, even today, with all the fertilizers and pesticides.

Multiple harvest festivals in a year – a proof too

Different parts of India have been celebrating different major harvest festivals through the year. Typically, they coincide with the significant phases in the farming calendar, corresponding with Equinoxes and Solstices.

In Bengal and Assam, three harvest festivals are celebrated in a year, each of them known as Bihu.

For example,

- Assam in the East, celebrates 3 Bihus (Rongali/Bohag Bihu, Kongali Bihu and Bhogali Bihu) corresponding with harvests during Vernal

and Autumnal equinoxes and Winter Solstice respectively.

- Punjab in the North West, celebrates 2 harvests as Baisakh, corresponding with Vernal Equinox and Lohri, along with Winter Solstice.
- Tamil Nadu in South India, celebrates Pongal, corresponding with harvest during Winter Solstice and Aadi Perukku, to herald sowing during Summer Solstice.
- Kerala in South West India, celebrates Vishu corresponding with harvest during Vernal Equinox

These names of seasons and crops have penetrated deep into the cuisine for various festivals too such as usage of *Kar Adai* i.e *Adai*, rice cake made from rice grown in *Kar* season for the *Karadaiyan Nombu* festival in Tamil Nadu.

Bharatha varsha - united by the monsoons, varsha

All these regions are united by the monsoons, Varsha which come year on year over India, in about the same time window.

In contrast to the English adage "To save for a Rainy Day", the rains themselves have been saved. For, in Bharatha thought, rains bring in prosperity and rains have been welcomed. Rains have hence been harnessed and rains have been put to good use.

This land is described as Sasya Shyamalam in Vande Mataram, the national song of India. The word Sasya denotes a fertile land of crops.

This was possible due to the expertise of not just farmers but also expert Irrigators who saved the waters when it rained and ensure continuous and equitable distribution to all the lands.

Conclusion

The objective of this paper is to reinforce the confidence in the propensity for high yield in agriculture in Bharat by collating and showcasing the sources that contain field data that have led to the reports on the high yield of agriculture in India before the British.

It also brings to highlight how evidences for this high annual yield can also be seen in the form of the tradition in Bharat of 3 harvests, multiple harvest festivals, specific cuisines tied to seasons and crops.

The consistent high yield of food grains led to sufficient food for the population to consume, sufficient food to share with *yatris* who traverse the land, sufficient food to save for an improbable drought, if and when it was to occur.

Through history, through different records in different languages, observers, historians, chroniclers have shown their amazement at the high produce of this land and they have recorded it in their own ways.

In this article, different details about practices and evidences have been culled out through the land across the centuries to bring forth a sense of belief in India's past records of high produce and a sense of confidence in its propensity to produce at record breaking levels once again, to become the food bowl for the world.