Newsprint scenario-coming two decades

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SUMMARY

The author in this paper describes newsprint what it is, the various reasons for increasing newsprint consumption/demand over the years and the various newsprint mills/projects presently on the scene-in production and in the project/planning stage and the production snailing and demand galloping and expected to be 4.4 - 4.6 lakh tons by 1986-87, 8.0 - 8.5 lakh tons by 1991-92 and about 9.5 - 10 lakh tons by 2000 - two decades later with imports resulting in drainage of colossal amount of foreign exchange which our country can ill afford for ages to come because of its disturbing the balance of payments and hence the dire need of uptaking the country's newsprint productivity to the level or rising demand or else making the country a chronic newsprint importer which it has even been after 35-36 years since independence in 1947. The coming two decades will see more newsprint mills coming up in various states based on bagasse, deinked newsprint, bagasse/deinked newsprint, bagasse/hardwoods (CMP)/bamboo (CP) (on the very model of Kerala and Mysore Newsprint operating successfully) imported pulps (GW CMP, TMP, TCMP, CTMP and CP-Sulfite, sulfate) or imported Pulps/deinked newsprint (0 : 50) using indigenous old/waste newsprint or even imported especially near the ports by the newsprint magnates singly or jointly who have been silent spectators all along and expecting Government only to procure the food for their newspapers or softwoods (Himalayan) 100% TMP. Newsprint being the heart and soul of our country the world's biggest and expanding democracy which the new/on-coming newsprint mills be providing and besides be creating a big employment potential too, need of the hour but be requiring an extra-special follow up no slippages and dillying dallying at all and now is the right time to have a second look at newsprint drawing a time table, planning very judiciously and working on a war -footing and providing enough newsprint for the posterity rather than starving them.

NEWSPRINT—WHAT IT IS ?

Newsprint conventionally has been consisting of 70-75% groundwood and 25-30% long fibres—sulfite, sulfate (bleached or semi bleached), magnefite, high yield—Bisulfite etc. etc. The groundwood has been over years replaced by Refiner Mechanical Pulp (RMP) Direct Reduction or Chemical Soak), Neutral sulfite semi chemical (NSSC)/Cold Soda Semi-chemical (CSSC), neutral sulfite chemi-mechanical (NSCM /Cold Soda Chemi Mechanical (CSCM), Ground Wood from impregnated billets (GIB), ALB Semi Cell, Chemi-groundwood (CGW), Thermo Mechanical Pulp (TMP), Thermo chemi mechanical pulp (TCMP) and more recently semi Chemical or sulphonated chemi mechanical pulp (SCMP) or pressurised groundwood (PGW) to various percentages and in some cases cent precent and this all depending upon the woods species and the individual mill and other various conditions.

Newsprint is the cheapest form of paper and an ephemeral publication. In Canada, USA and Europe, Newsprint is described as the paper for newsprint publishers including standard newsprint, off set, roto news and light weight for both letter-press and off set printing and including all papers from 40-57 gm irrespective of use. Newsprint basis weight has for the last 8-9 years shown some downtrend to 49, 45 and even 40 g/m² from the standard of 52 g/m² since inception. This is because of fast depletion and slow growing conifers and possibility of raw materials crisis/famine around 2000.

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NEWSPRINT PROPERTIES/OTHER REQUISITES AND CONSUMER REQUIREMENT :

a. **Various properties**

1. Basis weight
2. Formation
3. Surface smoothness/finish
4. Cleanliness
5. Shade
6. Bulk
7. Resiliency/compressibility
8. Opacity (to prevent show through resulting in affected printability)
9. Light scattering co efficient
10. Brightness and colour (to allow a reasonable quality of reproduction)
11. Print quality
12. Porosity
13. Moisture.

b. **Other requisites**

1. Mechanical properties
2. Perfect shape of rolls
   (Perfectly round and no calender folds)
3. Uniformity of deliveries

c. **Consumer requirements**

i) Uniform strength, tensile etc. etc. to allow unhindered and trouble free higher speeds on the printing presses i.e. good runnability a big must for lower costs.

ii) Uniform surface qualities to permit good printability with minimum degree of show-through and print through.

iii) Uniform substance (basis weight) to permit production of pre-determined copies.

iv) Uniform rather excellent paper profile permitting a uniformly tight reel across its width.

v) Uniformly high quality from reel to reel and lot to lot and from one delivery to next so that the printers always receive the papers they are familiar with and which they can rely on at the printing stage.

And the demands that production, advertising and circulation make on the quality of the newsprint are higher today than they were yesterday or ever have been.

Besides newsprints should be fuzz free, have no weak spots, good fines and fillers retention, survive in the media battle and our aim should be not quality at any price but the desired quality at the right price.

GROUNDWOOD (MECHANICAL PULP) AND ITS SPECIAL SIGNIFICANCE AND ITS ROLE IN NEWSPRINT

Groundwood (GW) forming the lion's share of newsprint has special significance for it as the quality of groundwood is reflected in the newsprint and it can safely rather very aptly be said "as the ground wood so the newsprint".

Groundwood (GW) forming the bulk component of newsprint bestows upon newsprint a number of very desirable properties such as :

(a) Plus points
- —Formation
- —Smoothness/finish
- —Bulk
- —Compressibility/Resiliency
- —Light scattering coefficient (LSC)/Opacity (OP)
- —Porosity
- —Absorbency
- —Oil absorption

and high bulk, LSC/Opacity, oil absorption and smoothness giving good "Printability" which is very dear to "Printers" and "Readers" as well

and
- —Higher yield (92-95%) (highest in the pulping field)
- —Lesser pollution than other pulps—CSSC, NSSC, NS-CMP, TMP TCMP/CTMP/SCMP and PGW

both giving lower production costs, higher profitability and big welcome in these days of sky rocketing prices.

And the only weakness being :

(b) Minus Points
- —Lower strength (Burst Factor, breaking length and tear factor)
- —Poor drainage properties (Lower freeness CSF)
- —Large number of fibre bundles or shives (which escape the best screening, centrifugal cleaning and are important sources of flaws in newsprint/printing papers and show up as tiny spots in supercalendered papers and these tending to impair/jeopardise runnability of newsprint especially at high and super high speeds of today and also production efficiency ultimately).

CHEMICAL PULP—ITS ROLE IN NEWSPRINT

Chemical pulp forming the balance (25-30%)

and not the lion's share is a reinforcement pulp supplying the very properties which GW lacks such as :

--Good drainage
—Higher strength
—Brightness
—Smoothness
—Longevity

and these are got at the price of
—Higher and inflated costs
—Jeoparised/Impaired/ sacrificed printability characteristics of newsprint.

India's—the world's biggest and expanding democracy-newsprint requirements have been rising from year to year and had risen from 42,500 in 1947 to 4.3 lakh tons in 1980-81 and are now 3.6—3 8 lakh tons. The rise in the newsprint requirement has been due to the increasing literacy and readership, rising standards of life, ever-mounting tempo of industrialisation and ever and above the exploding population which has risen from 86.16 crores in 1950-51 to 69 crores in 1982-83 and expected to reach about 90 crores in 1990 and 100 crores mark in 2000.

National Newsprint/Paper :

India's Newsprint story began with the start up of National Newsprint/Paper Mills Ltd., (Popularly known as NEPA) at Nepa Nagar (Madhya Pradesh) towards end 1955 and the erection having started as early as 1951-52. The Mill had a capacity of 30,000 tons a year, cost about Rs. 4—4.5 crorcs and was based on a newsprint furnish of 60% stone ground wood (SGW) from Boswellia serrata (salai a broad leaved specie) Ged-Made) and 40% chemical pulp (CP) Dendrocalamus strictus (Bamboo) available in plentiful supplies and newsprint manufactured on an American Newsprint (Pusey and Jones, Delaware, USA) machine having designed speed of 396 m/mt (1304ft/mt), wire width 5.4 m (226 inches) and trim of 5.08 (200 inches).

Production of newsprint rose every years meeting a part about 10—15 and later 16—18% of the total requirement and the balance being imported at a good expenditure of foreign exchange annually.

Mill's expansion to 250 tpd (75,000 tpy) had been embarked upon in 1964-65 from 100 tpd at a total cost of about Rs. 13.5—13.7 crores expanding the chemical pulp plant's capacity to 90 tpd, putting up a cold soda pulping plant ·90 tpd capacity, putting a newsprint machine (Wartsile Oy, Finland), expanding the water works facility and the machine was started using imported pulps (GW and CP) in March, 1969. The cold soda pulping plant started around April 1975 only, but has been operated at about 50—55% capacity till today due to certain snags in the plant machinery supplied and other Problems/reasons.

NEPA's present production is about 160-170 tpd much short of the designed capacity and presently undergoing renovation and modernisation aiming not only at the stabilisation of the production but also upgrading the qual ty which has been often criticised by the newspaper publishers. It is expected that NEPA will within a period of about 2 years attain the desired targets of quantity and quality which the Industry Ministry had stressed and turn the corner certainly.

It had put up an effluent treatment system at a cost of Rs. 1 Crore which was commissioned in June, 1980 so as to check the river. Tapti pollution which had been going on ever since mill's inception.

KERALA NEWSPRINT

Kerala Newsprint, the country's second prestigious newsprint mill (Hindustan Paper Corporation, Project) located at Newsprint Nagar (Velloor Dist : Kottayam) with a capacity of 80,000 tons per year and costing about Rs. 155 crores went on stream February end 1982, using imported pulp initially. It is based on a furnish of 60-70% Chemi-Mechanical Pulp (Cold Soda) from Eucalyptus (grandis/hybrid) & 30-35% Chemical pulp(CP)from Eta reeds & newsprint is being made on a Voith JM(Germany) newsprint machine with a wire width of 7.6 m, trim of 6 8 m and speed of 500-530 m/mt (designed speed being 850 m/mt). The newsprint has been well received by publishers in not only printability but also runnability and quality reported to be good. It is expected to reach the designed capacity by 1983-84 and has put up a full fledged effluent treatment system at a cost of Rs. 4.0 crores and shall be taking care of environment and ecological considerations which are attracting greater attention and the Government is very particular in avoiding any damage to environment and ecology. Kerala Newsprint has produced about 22,293 tons of Newsprint and is reeling under a big power cut and has affected the production to a great extent. The units of current available are 40-50 lakhs against the requirement of 150 lakh units.

MYSORE NEWSPRINT

Mysore Newsprint (Mysore Paper's Newsprint Project—a Karnataka Government Enterprise) located at Bhadravati (Mysore) with a capacity of 75,000 tons per year and costing about Rs. 152 crores went on stream on July 10, 1981 using imported pulps (Thermo Mechanical Pulp TMP

from Newzealand and Chemical Pulp (CP) initially. It is country's third Newsprint Project and based on 70% cold soda Refiner Mechanical Pulp (CSRMP) from Eucalyptus and other semi tropical hardwoods (using only Eucalyptus hybrid presently) and 30% Chemical Pulp (CP) from Bamboo and Eta reed furnish and Newsprint being made on Bel Baie II (Beloit Walmsley, U K.). Having a wire width of 7.55 and trim of 6.8 m and speed of 400-450 m/mt (designed speed of 850 m/mt). The newsprint production has been very well received by the newspaper publishers and quality to be good. It has also put an effluent treatment plant at a cost of Rs. 2 crore to take care of pollution of the Bhadra river on the banks of which it is located. The mill has been be set with lot of machinery breakdowns and is running with it's own pulps from October 1982 onwards according to the latest reports reaching here. Mysore Newsprint has produced 6789 tons of newsprint till March 1982 (from July 1981), 25, 613 tons till December 1982 (from April 1982) and saving in total a foreign exchange of Rs. 16.0 crores.

SUN PAPER

Sun Paper located at Cheran Mahadevi (Dist : Tirunelveli) Tamil Nadu has a capacity of 15,000 tons per year and is a mini newsprint mill based on a furnish of 30-45% Chemi-Mechanical Pulp (CMP) (Odai—Hardwood). 25% Chemical Pulp (Eta Reed). 10-15% waste paper, 10% gunny waste/waste cotton and about 5% filler;

Newsprint is being produced on two small newsprint machines and Sun Paper went into production in 1965. The quality of paper is good though slack with no rattle and newsprint is being made at a speed of 140-150 m/mt. Though a small mill but it is helping the country in its own way in alleviating the shortages of newsprint.

TAMILNADU NEWSPRINT PAPER :

Tamil Nadu Newsprint and Paper (TNNP), country's fourth newsprint project with a capacity of 90,000 tons per year (50 000 tons newsprint and 40,000 tons printing papers) costing about Rs. 185-190 crores, is coming up fast at Pugalur (near Karur Dist., Tiruchy, Tamil Nadu) is bagasse based (bagasse will be supplied by 5-7 sugar mills nearby) having a furnish of 35% Refiner Mechanical Pulp (RMP) 50-55% Semi Mechanical Pulp (SCP) both from bagasse and 15% kraft (eucalyptus) from existing plantations and newsprint be made on a Bel Baie II Paper Machine (Beloit Walmsley, UK) having a wire width of 7.5m and a trim of 6.8m and speeds of 800-850 m/mt. Trial production is expected by 1984 mid or end and full production by 1985 beginning/mid.

It will be utilising Beloit's high yield refining (pulping, process which is a refinement and improvement over Dr. Cusi's process being used by world's all newsprint mills in Peru, Mexico and Argentina (expected to be going on stream by 1982 end). Reed International Consultants (RIC), UK are the project consultants and Seshasayee Paper Board, Erode behind this very bold/daring venture of the Tamilnadu Government.

TNNP shall be country's first bagasse based newsprint mill and first bagasse based paper mill being Mandya National Paper, Belagula,(Karnataka) with a capacity of 12,000 tpy of paper. The country's earlier bagasse-based newsprint projects in Karad (Maharashtra) and Bodhan (Andhra Pradesh) got bogged down unluckily about more than 2 decades back after getting lot of fanfare and publicity.

TIRUPATI NEWSPRINT :

Tirupati Newsprint, country's fifth newsprint project and based on deinked newsprint (old waste newspapers) shall be coming up at Champa (Near Bilaspur), Madhya Pradesh, have a capacity of 79,000 tpy (using about 85,000 tpy of waste paper) besides newspapers it shall also use damaged newsprint rolls, off-grade newsprint cuts, waste from printing presses, unsold and unused newspapers also. 100% old deinked newsprint shall be the furnish for newsprint with no long (actually zero %) fibres chemical Pulp) at all and require neither any softwood nor hardwood pulpwood stands or forests and be extending the raw material base and utilising a big waste hitherto unutilised rightly. It shall cost about Rs. 90 crores and be going on stream in 1984 mid or end and create an employment potential for about 2300 people. 40% of the total process engineering and equipment will be imported from UK and rest procured indigenously. Export credit and and guarantee corporation of UK is lending Rs. 50 crores towards supplies and services from Great Britain at a concessional rate of 10% interest. The Govenment had issued a letter of intent sometime back to Tirupati Newsprint.

I had in mid sixties in my paper "Deinking of Newsprint - A recent trend and innovation,' recommended setting up of deinked newsprint mills near Bombay, Calcutta, Madras and Delhi 100 tpd capacity each and it is after 18-20 years our country would see such a newsprint mill and be again the country's first and more than welcome and it is expected that more will be coming up in years ahead and deinking of newsprint well accepted world-over, is an established technology and many world's newsprint mills are resorting to deinking and using that as a part of the furnish and some even 100% such as Garden State Paper and FSC Corporation USA.

Swedish Paper Mills in 1981 consumed 3.5 times as much reclaimed newsprint as in 1975 when legislature passed regulation on the collection of newsprint and collections of newsprint from householders alone have risen more than 800% in the 6 years from 27,000 to 273,000 tons.

According to the latest reports reaching here, the Beloit International Corp. has been recently awarded a contract valued in excess of $ 100 million by Tirupati Newsprint which involves complete design and supply responsibility including coordination of engineering, equipment supply, site construction and financing arrangements. Beloit will work closely with the leading Indian and International Construction and consulting engineering firms in the execution of this recycled newsprint projects.

KARNATAKA NEWSPRINT

Karnataka Newsprint is a bagasse based newsprint projects with a capacity of 9.000 tpy costing Rs. 4.46 crores and coming up fast at Nanjangud (Dist Mysore) and be going on stream by mid/end 1984. It shall be country's first mini-newsprint mill and be using Chemi-Thermo Mechanical Pulping (CTMP) process which has been developed by Japanese in collaboraiion with ASRCT, Thailand and RFD, Ministry of Agriculture and Cooperatives, Bangkok and which is a new breakthrough in newsprint manufacturing technology. The CTMP process can be used for newsprint or paper and will have collaboration with a Japanese Company.

Success of this newsprint venture will give impetus and spur in the country similar mini newsprint mills by sugar mills themselves and others and will go a long way in helping upping enhancing country's newsprint productivity, be a real shot in the arm extending the raw material base and utilising the huge amount of bagasse which has been and is being burnt by the sugar mills in their boilers because of its cheapness, almost zero cost and in mill availability and the time has come to replace that with coal so that the sugar mills spare bagasse for newsprint/paper manufacture.

CENTURY's NEWSPRINT VENTURE :

Century's Pulp/Paper/Newsprint Company is putting up a 60,000 tpy mill near at Lalkuan, Dist. Nanital (UP) and be making 20,000 tpy of newsprint (and balance 20,000 tpy writing/printing and 20,000 tpy pulp (rayon grade) and be going on stream in 1984-85.

PUDUMJEE PULP/PAPER :

Pudumjee Pulp/Paper has also plans to put up a deinked newsprint mill based on old waste newspapers.

SOMANI's NEWSPRINT PROJECTS :

Somani's are putting up a newsprint project with a capacity of 50,000 tpy in Bastar (M.P. - a raw material rich State) and be costing about Rs. 100 crores. The M.P. Government is backing this project very much. The State of Madhya Pradesh which is cellulosic raw materials rich and has potential for still more newsprint and/or paper projects and that should be exploited in the interest of more productivity and country at large.

KERALA, MYSORE AND TAMIL NADU NEWSPRINT—A NEW GENERATION IN INDIA :

Kerala, Mysore and Tamil Nadu Newsprint really represent a new generation of pulping and paper making technology as far as our country is concerned. Today the newsprint furnish has undergone a radical change/revolution to Chemi-Mechanical Pulp (CMP) and Chemical Pulp (CP) 65—70 : 30—35 as at Kerala and Mysore Newsprint and Refiner Mechanical Pulp : Semi-Chemical Pulp : Kraft :: 35 : 50 : 15 as at Tamil Nadu Newsprint/Paper and 100% deinked newspapers at Tirupati Newsprint and 100% Chemi-Thermo Mechanical Pulp as at Karnataka Newsprint and not the same and old and earlier of stone groundwood and chemical pulp (presently being 40–45% SCW : 35—40% CP and 10—15% CSP—Cold Soda Pulp). The new Chemi-Mechanical Pulping processes be giving a yield of 85—88% and are the latest and rising stars on the mechanical pulping horizon and best suited for tackling taming the young plantation grown and regrwoth hardwoods where stone grinding gives poor pulps and shall be extending our raw material resources.

These plants have in-built measures for energy conservation especially in these days of energy crunch and rising prices with a steam consumption of 7.5—8.0 tons/ton of paper as against 9—11 tons/ton of paper. The power consumption though is higher at 2000-2200 KWH/ton as compared to 1300—1400 KWH ton due to higher amount of energy used in refining.

Besides the paper machines today are of bigger widths, higher speeds having pressurized and improved headboxes, no-draw or short draw presses allowing running of even weaker furnishes at higher speeds improved drying, better calendering and higher capacity all giving lower costs/ton, improved product of low grammage and constant substance—basis weight, good strength and brightness corresponding to all international standards and optimum moisture of 8—10% ensuring better runnabil-ity at the printing presses. The two-wire formers especially at Kerala, Mysore already in operation and the third one at Tamil Nadu Newsprint/Paper are on

the model of the rising trend of twin wire forming in the world and give a host of much desired/most welcome advantages for the publishers as against the old fourdrinier and give a fine and better product with advantages such as perfect sheet symmetry, less two-sidedness, lower wire mark, higher filler/fibre retention, low tensile-strength ratios, good formation and improved reproduction in letter press and dilitho, less/low linting propensity for offset paper, uniform look-through, same ash content on both the sides and improved printability and better reader acceptance etc., etc.

And these two wire formers and the Chemi-Mechanical for making good quality newsprint from short fibred hardwoods and especially young (8—10 years rotation)/plantation grown or regrowth wood (age of 15-30 years) and Kerala and Mysore today are the living examples of the modern and fast emerging newsprint technology.

Another significant rather very spectacular feature is their having put up effluent treatment plants giving extensive treatment in a bid to keeping the rivers clean and also installing electrostatic precipitator in Soda Recovery for claiming back the chemical compound (Sodium) normally going along-with the flue gases and in overall environmental improvement which our Government is stressing very much these days and has already created a Department of Envinonment.

Besides even the water comsumption in these modern mills is of the order of 100—120 m^3/ton of newsprint as against 300—350 m^3 in the older mills and with more of recycling of water, white water and lesser use of water meaning lesser effluent again another edge over the older mills.

NEWSPRINT PROJECTS—BAGASSE BASED IN MAHARASHTRA AND UTTAR PRADESH—TWO NEW WELCOME/TIMELY ENTRANTS

According to the latest reports reaching here the newsprint project in Maharashtra shall be located in Ahmednagar District which is a rich sugar cane area and the various participants will be the SICOM, three sugar mills and Eastern Paper Mill (EPM), Lake Town, Calcutta. The project will be based on 80% bagasse and 20% kenaf and Eucalyptus.

The Newsprint project in Uttar Pradesh will be located in the Kashipur sugar belt (District Nainital) and the participants would be the IDC (U.P.), two sugar mills and the Eastern Paper Mill (EPM), Calcutta. The project will be based on 80% bagasse and 20% soft woods.

Both of these projects, because of being located in the backward districts will be entitled to many state and central government concessions and subsidies and would be employing the process technology—namely thermo mechanical (TM) and semi chemical (SC) for pulping bagasse and EPM has already acquired the know-how.

Eastern Paper Mill has been appointed the Project Managers for both of these venture and the consultants are Development Consultants Ltd (DCL) Park Street, Calcutta, Tata Economic Consultancy Services (TECS) and Krauss-Maffei, Germany (West).

Licenses are expected to be received shortly from the Central Government and then the Global Tenders shall be floated for the plant and machinery.

The project costs of Rs. 450 crores for both already includes expenses to be incurred for installing depithing plants and modifying the sugar mill boilers which would supply bagasse. The depithing units will depith bagasse (pith being about 30% of the bagasse) and the sugar mill boilers be using coal and pith for generation of power.

These projects are expected to be getting going in about five years time and help sugar cane growers to realise better prices for cane as bagasse may be an important and much sought for raw material for paper/newsprint production.

Soft loan is being arranged from the World Bank.

These projects are expected to be viable and be selling newsprint at the prices less than the imported newsprint and making reasonable profits.

The EPM, participation in these projects is a major diversification especially at a moment when their order book position is gloomy and not rosy.

All the newsprint mills/projects described shall contribute 3.69 lakh tons annually (National Newsprint/Paper (NEPA) - 75,000 tons, Kerala Newsprint (KNP)—80,000 tons, Mysore Newsprint (MNP) - 75,000 tons, Tamil Nadu Newsprint/Paper (TNNP)—50,000 tons, Tirupati Newsprint (TNP)—80,000 tons and Karnataka Newsprint (KNNP)—9000 tons) by 1984-85 all going well and the mills/projects running at designed capacity.

The newsprint productivity shall rise further to 6.19 lakh tons annually with the going on stream of both the newsprint projects (bagasse-based) in Maharashtra and Uttar Pradesh and Bastar (Hard wood/bamboo based) by 1986-87 or 1988 maximum.

The demand/consumption of newsprint had risen to 4.3 lakh tons for 1982-83 and slackness in demand is due to world-wide recession and is expected to pick-up certainly.

The demand is expected to rise and estimated at 4-8-5.0 lakh tons in 1986-87, 8-8.5 lakh tons by 1990-91 and 9.8-10.0 lakh tons in the year 2000—about 2 decades later and is expected to be always outstripping the production unluckily and need of newsprint imports for many more years to come meaning drainage of colossal precious foreign exchange annually to meet the needs of the country—the world's biggest and expanding democracy which are mounting day by day and year by year. The imports had at one time touched a very high figure of Rs. 145-150 crores. Imports for the year 1982-83 have been estimated at 1.84 lakh tons and are low as compared to earlier years but the newspapers have been complaining of imminent shortages though the Union Government/STC has often denied any shortage and are taking timely action so that the newspapers are not inconvenienced or starved leading to their closures or reduced circulation.

And the Government has decided to import additional about 30,000 tons of newsprint because of a shortfall in indigenous newsprint production of 48,000 tons in the year 1982-83.

But a very pertinent question arises why should not our country be sufficient in newsprint and how long have we to be depending on imports ? Time has come to have a second look on newsprint which is as important as steel, fertilisers, oil/petroleum, heavy electricals, cement etc., etc., for a proper and judicious functioning of democracy and can very aptly/rightly be called the "food" for newspapers which are the heart and soul of democracy.

MORE INVESTMENT—NEED OF THE HOUR AND MORE THAN IMPERATIVE

Investment in the newsprint sector has been very poor rather stepmotherly and this can be again ascribed to not upto the mark performance of the earlier only Newsprint Mill—NEPA which had frightened the entrepreneurs to enter this sector. Besides the slim profit margin and a lower selling price were further hinderances in the way and the private sectors which even after getting the letters of Intents/Licences (Karamchand Thapar and Bros. Newsprint Mill in Himachal Pradesh—Himalayan Conifers based, with capacity of 60,000 tpy and Newspint Mill in Bodhan (Andhra Pradesh) with a capacity of 60,000 tpy) failed to put up the projects even after lot of fanfare and publicity for years together and this was another reason why the Government was kept in the dark and the lag in the productivity and the demand even after 35-36 years after independence.

The Central Government after waiting and seeing the slow growth in the Newsprint sector which is very vital to the growth of the country formed Hindustan Paper Corporation as early as May 1970 and entered the field of newsprint and also paper on a massive scale and besides encouraged the Karnataka Government's plan to expand Mysore Paper by putting up a 75,000 tpy newsprint mill and had further sanctioned Tamil Nadu Government's bagassed newsprint venture, Tirupati Newsprint, Karnataka Newsprint, Baster Newsprint and two bagasse—based newsprint ventures one in Maharashtra and the other in Uttar Pradesh.

No doubt this all represents an encouraging picture in the newsprint sector but even then there is a dire need to put up more and more newsprint projects based on a variety of other raw materials such as :

a) Hard woods (Virgin as well as plantation-grown)

b) i) Bagasse
   ii) Bagasse/Deinked Newsprint
   iii) Bagasse/Hardwoods (CMP)

c) i) Kenaf
   ii) Bagasse/Kenaf

d) i) Deinked News
   ii) Deinked News/Kenaf

e) Softwoods (Himalayan) 100% TMP.
   Pine 90% TMP/CTMP and 10% CP.

f) i) *Imported Pulps (SGW, RGW, TMP, CTMP, TCMP, CP-sulfate, sulfite etc. etc.)
   ii) *Imported Pulps/Deinked News.

*The newsprint projects based on these raw materials could very safely be put up by the newspaper magnates themselves singly or jointly near the port towns and these would not be requiring much investment (only a Paper Machine—Preferably a 2—wire former, the rising trend on the newsprint making horizon and pulp beating/refining, waste water treatment facility power and steam facility and the waste water treatment plant will not be very sophisticated because of the absence of air pollution and minimal water pollution which a conventional newsprint mill normally needs.

The newspapers of the country have been silent spectators all these years and depending upon the Government for all the help-imports but a time has come now for them to rise to the occasion and help not only themselves but the Government as well whose hands are already full. This would be meaning lot of advantages/merits for them and are enumerated below :

— Cheaper proposition as compared to a normal 2 or 3 pulp streets newsprint mill.

— Cheaper and at doors newsprint availability with no waiting and no shortages.

— No headache of raw materials (Bamboo, hardwoods and softwoods etc. etc.) which our country is short of and when locating new raw materials is a big problem/headache.

— Usage of their own waste (cuttings, left-overs and unused and unsold newspapers etc. etc.)

— Very little expenditure on pollution abatement equipments and running costs,

— No environment damage and ecological disturbance/ damage and pollution (Nil air and minimal water).

— 100% TMP newsprint mill still a very profitable/ economic proposition (Lowest cost / ton) meaning lower costs and constant quality and better high speed printing presses run.

— Lesser expenditure in transportation of the Pulp as well as newsprint.

— Lower paper costs/ton and another avenue of more employment potential the need of the hour.

— Lesser erection time and earlier production realisation.

— Improved profitability and ear ier returns on Investment (ROI).

— Cheaper newsprint—a very big welcome in these days of spiralling prices and mounting inflation.

MORE BAGASSE NEWSPRINT PROJECTS— THE NEED OF THE HOUR :

India has emerged to be a King and No. 1 in sugar production in the world, beating Brazil and Cuba and with a production of 84.38 lakh tons as against 84 and 82 lakh tons respectively and this indicates availability of a huge potential raw materials on which we can base future newsprint mills and raise our productivity to catch up with the demands. The only bottle neck is the sparing by the sugar mills of the bagasse which they use as a fuel in the boilers because of its almost zero cost and in-mill vailability. The sugar mills shall have to be provided with coal instead so that bagasse—a very good source of cellulose could be spared and be used for not only newsprint but paper as well. Total bagasse availability in the country is about 260 lakh tons annually.

Bagasse has an edge in being available annually (being harvested over a 6 month period) over the other raw materials such as bamboo taking 4-5 years to mature and hardwood 7-10 years, pines 15-25 years and softwoods 70-100 years.

The table below gives at a glance the growing rates of various fibres sources :

TABLE—I TYPICAL GROWING RATES OF VARIOUS FIBRES SOURCES

No.	Fibre Source	Yield/Hectare/ Year-Tons
1.	Bagasse	6.9
2.	Spruce (Quebec)	1.5
3.	Pine (Southern)	7.7
4.	Kenaf	19.0

As far as technology of newsprint manufacture where earlier some clouds of doubts were, is now all clear since April 1978 when world's first newsprint mill - INDUPERU, Trupal, Peru went on stream and coming up of other newsprint projects-bagasse based. These all are employing Dr. Cusi's pulping process with some variations and changes here and there.

Our Indian Newsprint Projects bagasse based could be based either

on 1. Dr. Cusi's pulping process

or 2. Beloit's high yield refining (pulping) process

or 3. ENSO Gutzeit's Einland CMP Process which is the recent and latest on bagasse newsprint horizon and which was one of the offers for Tamil Nadu Newsprint/Paper and had been rated as No. 1 by the World Bank for exclusively newsprint.

Tamil Nadu government has really to be bucked up for having shown keen interest in utilisation of bagasse for newsprint and gone in for this project in a bid to increase the country's long lagging newsprint productivity and with the coming up of this and subsequent success shall exhort the other bagasse-rich states like Karnataka, Bihar, etc. etc. to also put up newsprint projects. Maharashtra and Uttar Pradesh have already taken a cue from Tamil-Nadu and are going ahead with newsprint projects of 1,00,000 tpy capacity each as against 50,000 tpy newsprint and 40,000 tpy printing paper by TNNP and would be based on either Dr. Cusi's or Beloit's or ENSO's pulping process.

ICIDCA project in Cuba is also busy doing lot of work on newsprint and other papers and also rayon grade pulp from bagasse and whose consultant/adviser is Dr. Atchison, Joseph E- world's

authority on bagasse pulping and we expect some interesting breakthrough in 1983 or 1984 and is confident and aiming to produce bagasse newsprint without fillers which has been an uphill task and not possible till now. Fillers are a necessary evil in the production of bagasse newsprint so as to avoid lower optical properties and subsequent show-through and affected printability and ultimately readers displeasure and complaints.

Another alternative to fillers is the use of SGW, RMP, TMP, CTMP or TCMP or SCMP which some of the world's newsprint projects are employing and also could be exploited by Indian bagasse newsprint projects depending on their availability in years ahead and i is the fear of low optical properties (Opacity and Light scattering coefficient LSC) which have been holding up the coming up of bagasse newsprint projects and using of fillers or pulps (SGW, RMP, TMP or CTMP) opens up a way out of producing newsprint equal in properties/ quality with softwood pulp newsprint This could mean having newsprint projects/production with quality equal or just equal to the international standards and would mean saving of precious foreign exchange annually rather than draining which we have been ever since independence and even earlier.

BAGASSE AND HARDWOOD PULP NEWSPRINT—A NEW IDEA MOOTED BY SUNDS DEFIBRATOR

Sunds Defibrator AB, Sweden, has come with a suggestion which can be termed as a new and novel idea and revolutionary too of using CP Bagasse and CMP (hardwoods – Eucalyptus) in the ratio 60 : 40 and work has been done under the direction of Dr. Gierlz H at Technical University of Norway Trondheim. Norway. The very interesting details have been presented by M/s Ryrberg, KC, Falk, B, Lowgren, U in their paper presented at the 1982 TAPPI Pulping conference and could also be exploited by the new enterpreneurs in the bagasse newsprint field in the years ahead in our country and other countries too. They are of the very opinion that such a furnish can yield newsprint of fully acceptable strength and other properties and printability too, at a substance rate of 50—52 g/m^2 and the furnish of 60 : 40 :: CP (bagasse) : CMP (Eucalyptus) was run at the pilot paper machine at the Norwegian Institute at Oslo, Norway. They are of the view that further improvement in the newsprint properties can be obtained by optimising the :

i. Pulping process
ii. Operation of the paper machine
iii. Quality of the filler
iv. Printing press
v. Quality of ink

Such a newsprint furnish would certainly be of utmost/immediate importance/help for not only our country for utilisation of bagasse and at the same time local short fibred hardwoods but also for other developing countries and developed as well :

TABLE NO. II—BAGASSE NEWSPRINT FURNISH DETAILS

No.	Newsprint Project	Country	Dr. Cusi Pulp	CP/Kraft %	SGW TMP	RMP Bagasse %	CMP HW %	Filler %
1.	INDPERU, Trupal	Peru	75-90	0-15	0-15	—	—	5-15
2.	Sociedad Paramonga SA Ltd., Trupal	Peru	75-90	0-15	0-15	—	—	5-15
3.	Mexicana de Papel Periodico (MEXPAPE) Tres Valles (Veracruz State)	Mexico	75-80	5-10	10-15	—	—	0-15
*4.	Papel de Tucuman, La Reduction (Tucuman Province)	Argentina	90	10	—	—	—	—
**5.	Tamilnadu Newsprint/ Paper, Pugalur, (Tamil Nadu)	India	50	15 (hardwoods)	27-30 (planned 35)	—	—	5-8

* Expected
** Proposed and on which project has been based

BAGASSE MINI NEWSPRINT PROJECTS :

It is not only the maxi/giant newsprint projects in which lies the salvation of the country's newsprint sector but mini projects also and which could go a long way in not only increasing the country's newsprint productivity but also creating employment potential. It is felt, the sugar mills of our country could go in for singly or jointly mini newsprint projects - bagasse based (on the very model of Sun Paper Mill, Cheran Mahadevi, Dist. Tirunelveli, Tamil Nadu as per as capacity is concerned) and these would contribute in their small way to uptaking the newsprint productivity and it is said that "many a mickle makes an ocean".

Higher newsprint price as available today and the various concessions announced by the Central Government sometime back for encouraging paper and newsprint projects - bagasse based should certainly exhort the sugar mills to go in for diversification - mini newsprint projects (capacity of about 50 tpd) and taking advantage of the situation.

Some of the country's sugar mills have gone in or are going in for paper (writing/printing) projects with a capacity of 20 tpd which is really a very happy and welcome and heartening trend and possibly other sugar mills would be also going in for mini newsprint projects in the near or far future, it is fervently hoped.

BAGASSE DRIER—A NEW DEVELOPMENT OF GREAT SIGNIFICANCE TO SAVE BIO-MASS ENERGY AND ALSO BAGASSE

Hindustan Air Craft Limited (H.A.L.) Bangalore has developed recently a bagasse drier with a capacity of 20 tons per hour in collaboration with Bharat Heavy Plates and Vessels (BHPV) and this is considered to be a major breakthrough in harnessing biomass energy. The recent trial has been reported to be successful.

Drying of bagasse will help increase its heat value and result in significant savings of bagasse which could easily be utilised for newsprint and paper production as well and presently being burnt wastefully in sugar mills.

Many countries in the world have already installed the bagasse drier and it is expected that the Government will make it compulsory through a special legislation for the country's sugar mills to install this.

Utilisation of bagasse saved thereby will go a long way in helping reducing this strain on the already heavily taxed forest resources.

According to the latest reports reaching here the first bagasse drier is being installed in Mysore Sugar Mill, Mandya (Karnataka) where earlier trial runs were conducted to prove the viability of the technology. This project had been sanctioned by the commission on alternate sources of energy (CASE) and is being executive by the HAL in collaboration with the Government of Karnataka and the Mysore Sugar Mill.

HIMALAYAN SOFTWOOD-ANOTHER SOURCE FOR MORE NEWSPRINT PRODUCTIVITY :

The Himalayan softwoods (conifers—spruce, fir and pine) because of being located at formidable altitudes/heights (7000-10000 metres) have till now escaped exploitation by the pulp and paper/newsprint mills because of higher costs and considered to be uneconomical.

In earlier years - 2 to 3 decades - and still earlier, with the Forestry Sector and Newsprint Manufacturing Technology, their utilization was not economical and profitable proposition. But the researches and developments in both these sectors forestry and newsprint too today newsprint Projects based on this Himalayan "Green Gold" are an economical proposition and it is hoped that our country will certainly take advantage of these may be in the near or far future.

The softwoods could be extracted using transportation by road or river till altitudes possible and for higher altitudes considered to be formidable we could go in for helicopter logging, balloon logging, aerocrane logging, cable logging, hydraulic wood chip pipe lining etc. etc. singly or jointly. These may be little costlier in the beginning but are the only alternative/way out for exploiting hither to unused soft woods and which are oldening/rotting and are a beautiful source of cellulose considered A-I and excellent for newsprint and in the developed countries newsprint industry came upon these, thrived and still thriving though other raw materials have also appeared on the scene such as hardwoods, bagasse, deinked newsprint etc., etc.

The older furnish of 70 : 30 SGW: CP for softwoods newsprint which is water/air pollution causing need not be the base for such newsprint mills and we could go in for 100% TMP newsprint mills with the researches and developments in the newsprint sector have brought forth and the trend is fast expanding in Canada, USA and Finland. Any higher initial costs in the wood extraction and logging/wood handling would be offset to a great extent by the utilization of 100% TMP (% CP which normally is 25-30% in conventional softwood pulp newsprint.

Such 100% TMP newsprint mills would be entailing multifarious advantages/merits and which are enumerated below:—

— Cheapest/Cheaper newprint, lower cost per ton as compared to the present or would be to come hardwood newsprint offseting in a great way the escalating costs all-where and all-round

— Elimination of chemical pulping and soda recovery facility (including evaporator, caustisizer, lime kiln and precipitator) a big drop/cut in the overall project cost

— Elimination of chemical pulp (long fibres) which normally is about 30% and is more costly than TMP (about $ 300 or Rs 2700-3000 per ton)

— Nil air pollution and minimal water pollution-a very big welcome in these days of strictening legislation on water and air pollution as compared to a conventional newsprint mill which pollutes not only air but water as well

— No environmental disturbance or damage to the scenic beauty (if the mill is put up in Jammu and Kashmir or Himachal Pradesh which has been a phobia till now)

— Minimum or almost nil expenditure on water pollution abatement equipment or machinery purchase, installation and running/maintenance as compared to a conventional newsprint mill

— Utilization of old, over mature soft wood lying unused for decades rather centuries (leaving the trees for years together beyond maturity 75-80 years means good/best fibres going to waste). Harvesting of old trees is very essential before these start oldening/decaying/rotting as these overmatured trees if harvested in time would leave precious nutrients for the young trees to mature straight and healthy.

— Double bonus in meaning reduced raw material requirement to the extent of 20—25% and in production of 6.25% or more area of light weight (LW) newsprint at a basis weight of 48.8 g/m² or still lower grammages of 42-45 the rising and mounting trend world over and reported to be a net gain and big success.

— Un-influenced by rising oil prices and the proposition/investment becoming increasingly interesting (as it eliminates the need for oil consumption and fuel tanks) and makes the mill less vulnerable to trade interruptions and price fluctuation and labour difficulties outside the mill.

— Reduced steam requirements (about 50-70% for drying paper/newsprint if higher refining pressures are employed and preferably both the refining stages are pressurized).

— Ability of 100% TMP newsprint to withstand higher moisture in the calendering without blackening.

Higher moisture results in better newsprint runnability meaning a lower energy consumption (due to the fact of less broke generation). An increase of moisture content by 1% (from 9 to 10%) would mean a saving of 30 KWH/ton or Rs. 9.9/ton.

— Savings in labour, energy and capital costs.

— A-I and excellent quality newsprint matching very well the overseas newsprint and beating all other indigenously manufactured newsprint—present or future.

— Lesser erection time and early production realisation (as compared to a conventional newsprint mill) i.e. about 1.5-2 years.

— Lesser overall project cost and a lower/much lower investment i.e. about 1/3rd as compared to a conventional 2 or 3 pulp streets newsprint mill (Rs. 25/30 crores as compared to Rs. 75/80 crores for the conventional newsprint with a capacity of 150 tpd and a yearly turnover of about Rs. 30 crores annually taking the newsprint price of Rs. 6000/- per ton for the imported variety).

— Earlier returns on investment (R. O. I.).

— Problems of raw materials solved normally a big headache while planning putting up a new newsprint unit in the country and difficulty in locating new raw material bases.

Such 100% TMP newsprint mills could be put up in the Himachal Pradesh, Jammu and Kashmir, North Bengal, Sikkim, Bhutan and even in Nepal and could have a capacity of 100-150 tpd depending the availability of the wood.

Such newsprint mills would neither be pollution causing nor be any danger to environment or ecology or sceinic beauty of the hilly places and these are all a big phobia to these states and till now the vast green gold resources remain unexploited for the benefit of the country. But now the time is right to rise up utilise/exploit these softwoods and 100% TMP (0% CP—Chemical pulp newsprint-way and which are pollution free and need imme-

diate/utmost attention of the soft woods-rich states and not like conventional paper and newsprint mill which pollute not only water but air as well though the recent advances in water and air pollution abatement have reduced the pollution to a very big d gree and the stringent and strict legislation is forcing the mills to instal/operate pollution-abatement equipment to see that the discharges conform to the set and prescribed standards or else face heavy penalty and fines.

The author in his paper "Thermo Mechanical Pulp (TMP)—the latest champion on the horizon of Mechanical Pulp and of special and immediate importance to the Jammu and Kashmir presented at production and utilisation of forest product symposium, at Regional Research laboratory, Jammu (Council of Scientific and Industrial Research—CSIR) on March 5-6, 1979, had recommended setting up the 100-150 tpd newsprint mill in the state of Jammu and Kashmir.

DEINKED NEWSPRINT—ANOTHER VERY POTENT FIELD YET TO BE EXPLOITED

Deinked newsprint is another field which our country has yet to exploit and follow the world-wide trend in the developed and industrialized countries with a view to increasing its newsprint productivity.

Newsprint usage per day is about 1050-1100 tons and waste newsprint can be deinked and used for newsprint manufacture and today technology for manufacture of newsprint from 100% old newspapers is available and Garden State Paper Co; New Jersey, USA is the pioneer and is having 3 such newsprint mills—deinked with a capacity of 100,000 tpy each.

Besides, deinking plant & equipment is available from Voith, Krofta, Beloit, SWEMAC, LAMORT, etc. etc.

Deinking of newsprint shall open up another raw material base and especially at a moment when finding more and proper raw material bases is a problem and hindering putting up more newsprint mills to meet the mounting demand of the teeming millions of the country. Besides, it would be enabling utilization usefully of the old/waste newspapers hitherto and all the years going waste or utilized for wrapping/packaging which can be easily substituted with wrapping/kraft paper from agricultural residues.

The author had recommedded in his paper deinking of newsprint–A Recent Trend and Innovation' in Mid-Sixties putting up deinked newsprint mills with a capacity of 100 tpd each near metropolitan cities such as Bombay, Calcutta, Delhi and Madras and is very glad to see an 80,000 tpy capacity newsprint mill—Tirupati Newsprint coming up at Champa near Bilaspur (Madya Pradesh) and costing more than Rs. 100 crores and expected to be going on stream in 1984–85 and this really is more than welcome and it will be in private sector.

It is expected that such more deinked newsprint mills would be coming up in years ahead with a capacity of 100, 150, 200 tpd. in countries various States and especially near big cities as suggested above so that much expenditure shall not have to be incurred in transporting the waste.

Even so much so, if desired, or need be, waste and old newspapers can also be imported to supplement the indigenous waste newspapers and this be cheaper and go to save our environment and ecology at the same time. The deinked newsprint mills, if put up, shall not only raise the country's newsprint productivity but also at the same time be opening up a big employment avanue which is the need of the hours and the veritable headache for the Government to tackle with.

The present (older/new) newsprint mills should be compelled by the Government to go in for small deinking units with a capacity of 50-70 tons/day and the deinked newsprint forming about 10-15 or 20% of the total furnish with a view to meeting the lags/snags in their pulping plants, utilizing the old waste paper and at the same time exploiting the maximum possible available capacity at the paper machine thereby increasing the newsprint productivity, decreasing the strain on the raw material and especially when the supporting raw material stocks are not commensurate with the Mill's capacity and be also ultimately giving lower costs, upgraded profits especially when their project cost (of new units) has run as high as Rs. 155-160 crores as compared to Rs. 24-25 crores for old newsprint mills National Newsprint/Paper (NEPA).

HARDWOODS :

Our country is not blessed with so much of soft woods/conifers as other countries and hence a part of the answer of finding raw materials for meeting the rising needs lies in the herdwoods (virgin as well as plantation grown) which can be today very safely and easily utilized for newsprint manufacture on the very model of Kerala and Mysore pulping them CMP way. The need of the hour is to plant hardwoods especially the light density, light colour on a very gigantic scale by not only the Govern-

ment's Forest Department but also by Paper Mill's, private agencies, farmers and even individuals. In place of one tree cut 5–6 or even more need be plan ted so as to provide raw materials not only for the near future but also leaving enough trees for the posterity.

The various hardwood species that could be safely/easily planted are : Eucalyptus, Gmelina arborea, aspen (populus alimo), sesbania grandiflora (agathi) etc. etc. and all these be harvested on a 7-8/10 year rotation cycle and these young woods are best suited for CMPing giving best Cold Soda Pulp, light colour helping cutting on bleaching chemicals and the light density helping facilitated pulping (Chemi-Mechanical-CM).

Another problem where there are not enough pulp wood stands of a single species the pulping of mixed tropical woods is the only alternative though it may present various problems such as higher density, dark colour, certain extractives and undesirable compounds. B sides their heterogenous composition and varying pulping characteristics may also create complications. It is felt that such species should be harvested and further plantations be only taken up of only single fast growing desirable species.

PINE :

Pinus (Pinus-chir-Kail) is another wood species belonging to the conifers family and could also be planted, has a rotation cycle of 15-25 years and would go a long way in giving us more raw materials the need of the hour for the present and even future newsprint mills. Pine, various varieties had been planted in many States and with encouraging and positive results.

Pine TMP/CTMP/TCMP could form 90% mechanical pulp component of the newsprint furnish and balance 10% long fibres CP on the very model of Australian Newsprint Mill (ANM), Albury, Australia which went on stream July 1981, has a capacity of 180,000 tpy and running very satisfactorily with quality of newsprint matching well with the international standards.

Our country could also go in for pine based newsprint mills especially at places which are pine-rich either virgin or plantation grown.

KENAF :

Kenaf (Mesta – Hibiscus Cannabinus L) known as the Golden Fibre' could form a very good base for the future newsprint projects especially the eastern and other regions which are Kenaf rich and good amount of research work has already been done in USA, Australia and the results are said to be quite promising/encouraging and of far reaching importance for our country where the needs of the newsprint are high and mounting day by day and difficulty of locating new raw material bases.

ANPA-KENAF IS VIABLE AS A BASE FOR NEWSPRINT :

According to American Newspaper Publishers Association (ANPA) sponsored research study, Kenaf has the potential as a viable, cost saving substitute for wood pulp for newsprint. The research had been conducted by Soil and Land Use Technology in Maryland, USA beginning September, 1980. According to the report, Kenaf will :

— Meet standards for newsprint quality.

— Provide opportunity for the development of a new seed industry.

— Create opportunity for supply of fertilizers, pesticides and farm equipment.

— Require less energy for pulping.

— Provide farmers with a profitable/alternative crop.

— Enhance local economies in the south and south-west US.

— Provide truckers with more of business and

— Increase the newsprint production of the sun belt.

The researchers however cautioned that unilateral decisions will not lead to Kenaf's commercial development. 'Participation of all the three members of the production—manufacture—comsumption is very essential as they must be linked to coordinate the flow of Kenaf from farmer to mill to publishers if the crucial, doubleedged question of dependability has to be resolved", according to presstime (Published by ANPA).

Although adequate seen supply is currently lacking, steps had been taken to alleviate the constraint according to the reports. (Paper Trade Journal 30, April 30, 1982).

KENAF FUNDING SOUGHT :

The International Federation of Newspaper Publishers has submitted a request for funds to conduct additional research into the use of Kenaf as newsprint fibre and the proposal is directed to-

wards the UNESCO sponsered International Programme for the Development of Communications. The idea for the funding came from Mr. Soldewel, DN, (Chairman of the Newsprint Committee of the American Newspaper Publishers' Association-ANPA and the Unesco officials are said to have reacted favourably to the Kenaf paper notion, describing Kenaf as appearing 'to have the potential to meet legitimate world communications needs involving the supply of paper for literacy programmes and a variety of publishing activities.

···(Paper Trade Journal 64, Aug 30, '82)

AMERICAN NEWSPRINT PUBLISHERS ASSOCIATION (ANPA) RESEARCH WORK ON KENAF NEWSPRINT :

American Newsprint Publishers Association (ANPA) at EASTON—Philadelphia, U.S.A. had been busy for the last about 5—6 years in research in Kenaf (mesta) and their results had been presented at the International Kenaf Conferance in San Francisco in April, 1982, The Conference was attended by :

1. Farmers who experimented with the cultivation of Kenaf what to them was a new crop.
2. Researchers from various Universities.
3. Agriculture Department
4. Pulp/Newsprint Industry representatives.
5. Farmers.
6. Newsprint Production People (some of who had used kenaf based Newsprint for the production of their newspaper).

This Project was launched jointly by the ANPA and US Department of Agriculture and the pulp manufacturers also associated themselves later. ANPA's Newsprint Committee was the actual sponsor—Dr. Soldewel D. (Chairman, ANPA's Newsprint Committee) was the spirit and brain behind the project and who is also the publisher of the paper 'The Yuma Daily Sun'. But for his herculean efforts, the project could have not achieved such a big success in such a short time.

Canadian International Paper Co. (CIP) also lent all support and co-operation in experimenting with the Kenaf for pulping and devising a suitable process. Kenaf newsprint was manufactured and used by various newspapers.

Dr. Rine heart B. (Vice-president) and Dr. Jafee. E. (Directer) of ANPA both assisted Dr. Soldewel in this all work. The material and the process employed at every stage were subjected to elaborate and continuous tests.

Kenaf newsprint had properties almost approaching the international standards and subjected to normal environmental and production measures that obtain in newspaper plants.

The newsprint had a little lower capacity and a higher lint build up on offset blankets and was quite suitable for newspaper production and in some respects it was superior and runnability was excellent.

The consumption of ink was low considerably because of lower absorption and no rub-off and besides newspapers print on Kenaf acquired longevity-almost achival quality and these two are a bonus for the publishers.

A colour section print by St. Petersburg Times in December, 1979 came off the press at San Francisco Conference in April, 1982.

ANPA because of all this work/research on Kenaf could establish that Kenaf could be a big substitute for soft wood pulp for the manufacture of newsprint of an acceptable quality and besides manufacture in quantity would be feasible and economical.

United States is interested in setting up newsprint Mills in the southern parts where wood supply was scanty and which was at the end of a long supply line from Canada and these mills could use Kenaf as the sole or major portion of the furnish.

ANPA KENAF NEWSPRINT WORK OF IMMEDIATE/UTMOST IMPORTANCE FOR INDIA :

The work of ANPA which has given astonishing results and has no big significance for U.S. sub-belt only, other countries but also for our country where consumption/demand is going up and looking to the situation as is and where is there will always be a gap between the demand and supply and the imports again meaning big/regular drain of foreign exchange for decades to come.

Besides the raw material situation is not very happy and they are getting exhausted at a very rapid rate and finding raw materials is a problem not only of time but money also.

In case there is a world-wide shortage (as we experienced in 1973), of newprint we would be in

bigger troubles as we will have to reduce pages of newspapers, pay more and even accept lower quality paper/newsprint. Hence arises a greater necessity to be independent as far as newsprint is concerned rather than placing heavy reliance on the imports and not raising our own indigenous newsprint production as early as possible.

Hence, in such critical circumstances, it is of paramount importance to investigate and resort to newsprint manufacture from Kenaf as early as possible taking advantage of years-long research in U.S.A. to the very benefit of newsprint ndustry in India. Possibly the older NEPA or the Kerala or/ and Mysore could put up small Kenaf pulping units or use in their chemical or chemi-mechanical (cold soda) pulping plants and use that regularly as a part of their regular furnish to make up the lag in pulping units and utilising the excessive in-built capacity at their newsprint machines before and this could/would enable them to make up the shortage of raw materials which they may be experiencing presently or likely to experience in the near or far future. This Kenaf pulp (chemical) would decreas the percentage of CP which is as high as 40-45% presently at NEPA and the highest in the newsprint world.

The usage of successful research into the use of kenaf at home for newsprint manufacture conforming to International standards at a competitive cost/price shall save us not only time but expense too Besides it will allow us using Kenaf hitherto unutilised.

Kenaf is an annually renewable fibre source, has advantages over wood pulp fibres of

1) Higher yield

2) Requiring less space/acreage

3) Giving fibres with much bigger length/ strength thereby having a great potential in replacing a part of the chemical pulp (CP) giving lower costs or allowing increasing the paper machine speeds (near to designed) and thereby upping the newsprint productivity and giving lower unit costs and upgraded profitability - a big welcome especially in these days of spiralling prices and devil of mounting inflation.

Newsprint Mills with a capacity of 15,000 tpy or 30,000 tpy could be put up in Kenaf rich areas and these would be economically viable in view of newsprint bringing in higher prices of Rs. 6500 to 7000 a ton. Locating of mills near the raw materials would save them the transportation costs and give an edge over other big newsprint mills in manufacturing costs.

The furnish for the newsprint mills could be either 100% Kenaf or 85-90% CMP (Kenaf) and 5-10% kraft (chemical pulp-CP) and more depending upon the speed at which it shall be manufactured and giving good runnability not only at the paper machine but at the high speed printing presses

KENAF NEWSPRINT-TRIALS IN INDIA AS EARLY AS 1970-71 :

The Madras Gunny Exchange-a service Institute for consumers of jute goods had organised, conducted a seminar on "prospects for promotion of jute industry in Tamil Nadu" in 1969 and also a symposium on "Jute in Peninsular India" in 1978 endeavouring to establish the jute in this part of India.

As early as 1970-71 a centrally sponsored scheme under the aegis of the "Tamil Nadu Agricultural Department" was operated to conduct trials to assess the potential to cultivate both jute and mesta in the state with the help of the Service Instltute. Pulp was extracted from mesta (kenaf) and newsprint manufactured at Sun Paper Mills, Cheran Mahadevi (Dist. Tirunelveli) under the patronage of Si. Pa Adithanar (Agriculture Minister of Tamil Nadu) and the kenaf newsprint was tested by "Amrit Bazar Patrika" and the tests had confirmed the good prospects of manufacture of newsprint from Kenaf.

Pulse specialist in 1959 had informed the Institute that Mesta can be commercially cultivated in Tamil Nadu and besides in 1974 the Directerate of Agriculture had also confirmed that the 'golden' jute fibre can be well grown commercially and economically by the farmers in the state.

The trials of Kenaf newsprint in India can be described as the pioneering one and the trials in USA only subsequent to these.

The efforts of the Madras Gunny Exchange Service Institute have really to be lauded and applauded.

In our country about 30—40 lakh tons of jute sticks are available annually from the jute and mesta grown and jute is the main cash crop of the astern region concentrated particularly in the West Bengal, Assam, Bihar, Orissa and to a smaller extent in Uttar Pradesh, Tripura and Meghalaya.

After the extraction the fibre from the jute plant the woody residue left is used mainly for thatching roofs, fencing gardens and as a fuel but a considerable amount is just allowed to rot away. Jute stick is short fibred, soft and bulky in nature. Its density is 0.2 gms/cc and fibre length 0.58 1.07 mm.

RAW MATERIALS—RECOMMENDATIONS IN PARTICULAR

Raw materials for the newsprint mills the present, future and the suggested are to be taken care of particularly so as to keep the mills going, meeting the country's rising needs rather than starving the teeming millions and avoiding the expected/imminent famine/crisis world-wide by 2000 A.D,

* Large Scale cultivation of bamboo (rotation cycle being 4-5 years) in view fast depleting stocks of bamboo and quite a good percentage being in inaccessible areas and our country's 60-62% pulp/paper and newsprint industry based on bamboo—The King of Indian raw materials.

* Large scale plantations of fast-growing hardwoods especially the light density/light colour (as these would be more suitable for mechanical and especially for Chemi-mechanical pulping light colour, be requiring less of bleaching chemicals and in turn generating less of effluent problems and be all welcome.

* Exploiting the concept of pulping mixed hardwood species, utilising the existing forests and planting more suitable/desirable species after their exhaustion or harvesting.

* Exploitinng the Himalayan green gold—conifers the A-1 and excellent raw materials for newsprint and lying till now unexploited, ageing/oldening and rotting, decaying and utilising them through the fruits of researches not only in forestry sector—thenewer and revolutionary methods of wood handling and logging—and also the newer pulping processes the Thermo-Mechanical Pulping (TMP) or Chemi-Thermo Mechanical Pulping (CTMP) or Sulfonated Chemi Mechanical Pulping (SCMP) the recent pulping methods for softwoods presently on the mechanical pulp horizon and also planting huge/large scale more conifers not only providing wood future but also avoiding soil erosion resulting from large scale deforestation.

* Utilising bagasse available in plenty in our country through making special legislation for the Sugar Mills for spring bagasse and providing them coal instead.

* Utilising old/waste newspapers and magazines presently either going waste or being used for packaging and even importing old/waste newspapers which may be cheaper than the indigenous and be opening up a new raw material base without any environmental damage or ecological disturbance, and this needs special consideration of the government.

* Utilising Kenaf (Hibiscus Cannabinus L) also in the near future which is available in plentiful supplies in our country and research work on this to be started right now in the right earnest by the Central Pulp and Paper Research Institute and following the pioneering work done already by American newspapers Publisher Association (ANPA) in U.S.A. and also by Australia and other countries.

UPTAKING COUNTRIES NEWSPRINT PRODUCTION-SPECIAL RECOMMENDATIONS.

* Uptaking the productivity of old and new newsprint units to the designed capacity level on a crash basis and removing all the bottlenecks on a war footing without any more dillying-dallying and the Government to be appointing a special expert committee for this.

* Making it compulsory for the new projects on the scene to adhere very strictly to the stipulated erection/construction schedules by using PERT/CPM and a very close follow-up.

* Putting up bagasse based newsprint units with a capacity range of 150-250—300 tpd in bagasse—rich stages such as Maharashtra, Uttar Pradesh, Andhra Pradesh, Bihar and others and the Government providing caol instead to the Sugar Mills so that they could spare bagasse.

* Encouraging even mini newsprint mills with a capacity of 12,000—15,000 tpy based on CTMP process (either Hitachi—Zosen, Japan or CE—Bauer, U.S.A.) by sugar mills themselves singly or combinedly and the Government providing them coal and other facilities and some more incentives besides the already existing ones.

* Putting up 100% TMP newsprint mills softwoods (Spruce, Fir and Pine) in the Himachal Pradesh, Jammu and Kashmir, North Bengal, Sikkim, Bhutan and Nepal.

  100% TMP newsprint mills are the rising trend on the newsprint horizon in U.S.A., Canada and Finland too though utopian dream of Newsprint manufacturers for about three decades.

* Putting up deinked newsprint units near metropolitan cities like Bombay, Calcutta, Delhi and Madras with a capacity of 100-150 tpd based on indigenous newspapers or even imported, waste newspapers.

* Putting up 90% TMP (10% CP) Newsprint Mills on the very model of Australian newsprint mill,

NEWSPRINT / MILLS / PROJECTS TIME TABLE AT A GLANCE

No.	Mill Location	State	Production Capacity-Tpy	Expected Production Tons	Status	Raw Materials	Total Production Tons
A.	**Present :**						
1.	National Newsprint/ Paper Mills, NEPA NAGAR	Madhya Pradesh	75000 (55,000 Present production)	75,000	In production	Boswellia serrata, (Salai)/Bamboo	
2.	Kerala Newsprint (Hindustan Paper Corporation)	Kerala	80,000	80,000	In production	Eucalypt/Eta reed	
3.	Mysore Newsprint Bhadrawathi	Karnataka	75,000	75,000	In production	Eucalypt/Bamboo	
4.	Tamil Nadu Newsprint and Paper, Pugalur (Near Karur)	Tamilnadu	50,000 + 40,000 W/P Papers	50,000	Start up in 1984—85	Bagasse	
5.	Karnataka Newsprint Nanjangud	Karnataka	9,000	9,000	Start up in 1984 end	Bagasse	
6.	Tirupati Newsprint Champa (Dist : Bilaspur	Madhya Pradesh	80,000	80,000	Start up in 1984—85	Old/Waste Newspapers (deinked)	369,000
				369,000			
B.	**Future :**						
7.	(1) Newsprint Project	Uttar-Pradesh	100,000	100,000	Start up in 1987—88	Bagasse	
8.	(2) Newsprint Project	Maharastra	100,000	100,000	Start up in 1987—88	Bagasse	
9.	(3) Newsprint Project in Bastar (Somanis)	Madhya Pradesh	50,000	50,000	Start up in 1986—87	Hardwood/Bamboo	
10.	(4) Pudumjee Newsprint Poona	Maharastra	30,000	30 000	Start up in 1986—87	Old Waste Newspapers	
				280,000			280,000
C.	**Suggested :**						
11.	(1) Newsprint Project (100% TMP)	Himachal Pradesh	45,000	45,000	Start up by 1987—89	Soft-woods	
12.	(2) Newsprint Project (100% TMP)	Jammu and Kashmir	45,000	45,000	Start up by 1987—89	Soft-woods	

Contd. on next pages

13.	(3) Newsprint Project in Bastar	Madhya Pradesh	60,000	60,000	Start up by 1985—87	Hardwoods/Bamboo	
14.	(4) Newsprint Project	Bihar (North)	60,000	60,000	Start up by 1988—89	Bagasse	
15.	(5) Newsprint Project	Punjab	45,000	45,000	Start up by 1988—89	Bagasse	
				255,000			255,000
16.	(6) Newsprint Project	Andhra Pradesh	30,000	30,000	Start up by 1992—93	Old waste newspapers	
17.	(7) Newsprint Project	Gujarat	30,000	30,000	Start up by 1992—93	Old waste newspapers	
18.	(8) Newsprint Project	Maharastra	30,000	30,000	Start up by 1992—93	Old waste newspapers	
19.	(9) Newsprint Project	West Bangal	30,000	30,000	Start up by 1992—93	Old waste newspapers	
20.	(10) Newsprint Project	West Bangal	60,000 (either two mills of 30,000 Tpy capacity or 4 mills of 15,000 Tpy capacity)	60,000	Start up by 1992 - 93	Kenaf	
				180,000			180,000
21.	(11) Newsprint Project (100% TMP)	Sikkim Bhutan	30,000	30,000	Start up by 1995—97	Softwoods	
22.	(12) Newsprint Project	Andhra Pradesh	45,000	45,000	Start up by 1995—97	Hardwood/Bamboo and also hardwoods of Nicobar/ Andaman islands.	
23.	(13) Newsprint Project (100% TMP)	North Bengal	30,000	30,000	Start up by 1995—97	Soft-woods	
24.	(14) Newsprint Project	Delhi	60,000	60,000	Start up by 1995—97	Old waste newspapers	
25.	(15) Newsprint Project	Tamil Nadu	45,000	45,000	Start up by 1995—97	Old waste newspapers (indigenous and importcd)	
				210,000			210,000
							12,94,000

Albury, Australia in regions where pines (various varieties) are available or being planted or can be planted.

* Putting up more CMP/CTMP/TCMP (65-75%) newsprint units and the very model of Kerala and Mysore newsprint basing them on young plantation grown hardwoods such as eucalyptus, gmelina arborea, aspen, poplar, willow and leucaeana leucocephala (wonder tree) which is fast growing, deep rooted and disease resistant and called Kubabul/Subabul and other light density, light color fast growing hardwoods.

* Putting up mini newsprint mills with a capacity of 50-60 tpd on the pattern of Sun Paper, Cheran Mahadevi (Dist. Tirunelveli, Tamilnadu) which be not requiring exorbitant capital such as Kerala and Mysore and having not gestation periods and also requiring lesser construction periods and earlier production realisation and these mills be based on either stone groundwood (SGW) or Chemi-Mechanical Pulp (CMP) as the situation warrants.

* Exploring the possibilites of Kenaf newsprint and putting up Kenaf based newsprint mills and good amount of work has already been done by American Newspaper Publishers Association (ANPA) U. S. A. and International Paper Company (IPC) U S A.

NEWSPRINT PRODUCTION IN YEARS AHEAD TILL 2000-A GLIMPSE

No.	Year	Newsprint Production-tons
1.	1985-86	369,000
2.	1987-88	280,000
3.	1989-9	255,000
4.	1992-95	180 000
5.	1996-2000	210,000
	Total	12,94,000

A glance at the newsprint mills/projects-present, future and suggested shows that if all these are planned well, executed well and run well and all going well, would then be creating a total potential production capacity of about 12.94 lakh tons annually and taking the capacity utilization at about 80% would mean a total productivity of about 10.352 lakh tons by 2000 AD and this be matching with the demand which is estimated to be at about 10 lakh tons by then. The total investment required would be of the order of 1800-1900 crores within a period of 18-20 years from now onwards and tantamounts to an investment of about Rs. 100-110 crores annually.

This would require a very judicious/scientific and advance planning from now on wards with no dillying and dallying and a very close watch at the performance of the various schemes and avoiding failures and the slogan should be :

(a) Do or die, Produce or perish.
(b) Every State a Newsprint Mill or two

Let us rise up from the sleep of past and something do

This will give us newsprint and good amount of jobs too

And save precious Foreign Exchange and not disturb balance of payments too

It is further felt that it would be a great/exorbitant expenditure that the development of the newsprint industry would require along the lines suggested above and besides the Government it is the private sector, joint sector, newspaper magnates etc. etc. which shall have to rise to the occasion without any waiting as that would be catasatrophic to the country and its economy. Even so much so, joint projects with foreign countries collaboration be put up and would be welcome and encouraged failing which India be an age-long newsprint importer involving expenditure/drainage of precious Foreign Exchange which it can ill afford and as it has been incurring for the last 36-37 years since independence.

Concluding the author would say that the coming two decades will be very exciting for newsprint industry and many more newsprint mills will be coming up with India emerging becoming a big pioneer/leader in newsprint and the mills be based on new, novel raw materials revolutionary and latest pulping processes—the result of dedicated/concerted research work world-over and making fine newsprint and higher sales price of newsprint serving as an incentive and a big booster for the entrepreneurs and serving the bigger interest and needs of world's biggest and expanding democracy and keeping it aloft and going but huge quantities of raw materials that the present, future and suggested newsprint mills would require shall have to be well taken care of and the plantations—the need of the hour—be done on a very gigantic scale so as to not only providing the raw materials

for the present mills but also for the would-be-to-come-ones and the raw materials situation is not that very happy already and we would face a head on collision by 2000 AD as is expected world-wide and until and unless action is taken now and in the right time.

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