Asian Agriculture and the New Millennium-III

by A Z M Obaidullah Khan

(Continued from yesterday)

Technological Empowerment of Small Farmers

As new frontiers of science are being probed, novelty should not sap continuing commitment to less glamorous, sometimes contentious but essential programmes like agrarian reform and vesting real participatory control of natural resources, including Common Property Resources, in local communities; sustainable production and post-production systems that are less energy and chemical-intensive and more employment-enhancing; and sharply focused empowerment programmes for small-producers and women in agriculture.

Again, increased sensitivity in strategic sectors, such as the breathtaking advances of molecular biology and tissue and cell culture must ensure that the grim paradox of progress amidst stagnation is not replicated in the "new frontier". Technological imperialism is not merely a warmed-over slogan. It could distort essential work for food-security into the 21st century. Developing countries in the region need partnership in designing 'survival-kits" for food-security with hitherto ignored traditional staples and tubers. Recent advances in bio-processing, bio-refineries, application of protoplasm fusion and tissue-culture techniques could promise to defuse the emerging dichotomy between the new and old technologies.

The bottomline, however, is that farmers must have the sense of ownership of technology rather than of dependency. "Technological empowerment' rather than 'simple transfer of technology' is the name of the game.

Distinctive Knowledge of Women

A corollary argument relates to the distinctive knowledge of women. As Rochleau puts it, "half or more indigenous ecological science has been obscured by the prevailing invisibility of women, their work, their interests and especially their knowledge". (Gender, Ecology and the Science of Survival : Stories and Lessons from Kenya by DE Rochleau in Agriculture and Human Values, 1991) Women in many parts of the world, particularly in Asia and Africa have continued to play and still play a key role in preserving diversity, and in subsistence food-production. Kayapo women in Brazilian Amazon, for example, not only breed new crop varieties but preserve representative samples in the hillside genebanks.

Although there is no such thing as a set of gendered universal knowledge systems, the challenge for the scientists is to accept that "men and women farmers are germplasm consultants and research curators and to develop field methodologies and management strategies that support farmers in these roles." (Changing the Boundaries : Women Centered Perspectives on Population and Development by J Jiggins, 1994). As Dr. Swaminathan points out, "Traditional systems of farming depended on in situ conservation of genetic variability, mostly by women" (Sustainable Agriculture and Food Security in India, towards a Sustainable Society, ed. by M L Dewan, 1995).

Unfortunately, there is an exploitative asymmetry between the indigenous groups and the more powerful groups acquiring their information and knowledge. If women lack the opportunity and the means to develop their capacities and obtain control of the decisions regarding their knowledge, innovations and practices, there is a danger that women's ecological knowledge will be "packaged as a product to be collected, owned, and sold in the market place of ideas of the scientific community without them being compensated in any way." (D.E. Rochleau, 1991)

Community Conservation of Plant Genetic Resources

If women and men farmers are accepted as germplasm collectors and rightful owners of their own experimentations and seed collection, there is a strong case why the control of biodiversity in general and plant genetic diversity in particular should be brought to the local communities. Broadening the circle of social control of how genetic resources are managed and utilized is central to tomorrow's food security.

There is a case for appropriate and effective support to be given to community-level plant genetic resources conservation. Such in-situ conservation helps ensure that resources are managed in living conditions in the different ecosystems and socio-cultural conditions of the farmer custodians. Contextualized in the local ecosystem, community conservation facilitates continuous adaptation to changes, to both biotic and abiotic stresses, and most importantly, to farmer selection. The creator, custodian and end user of PGR is one. It was the farmers, of past and present generations, who provided the PGR diversity that we have today. Conservation of PGR cannot be divorced from its utilization, and therefore, cannot be divorced from its end users — the farmers.

For the best use to be made of Plant Genetic Resources farmers must control their own bio-materials and have access to as wide a gene pool as possible. They must be able to incorporate knowledge and information about their material when it is available elsewhere. Farmers' rights, in relation to the accessions conserved in national and international gene banks, need to be ensured. It is unfortunate that while the convention on Biological Diversity focuses primarily on naturally occurring species, status of collection prior to the convention vis-a-vis intellectual property rights still remain in limbo.

Unfortunately, collective knowledge of the producers is excluded from the definitions of intellectual property rights. The enclosure of "intellectual commons" of the peasantry must be done away with. Sustainable enhancement of biodiversity for food security will require the formation of a new covenant under which farmers and scientists; non-government and people's organizations, governments and international institutions, can work together for the well-being of humanity. Such lofty words cannot mask the fundamental power imbalances among the actors. Hence, the necessity of ensuring mutual respect and mutual benefit. The traditional/modern or common/private dichotomy usually shortchanges the powerless at the market place of the powerful.

Water-Management

Water "rolling from mountain springs with soft inland murmur", cannot be taken for granted any longer. In the rainfed areas farmers need better ways to harvest every drop of rainwater.

Consequently, operational improvements will have to focus more on increased water use of efficiency and better on-farm water management, two vital sustainable components for irrigated areas; while cost recovery for irrigation systems should also be reviewed and developed. In general, better management of natural resources in irrigated regions, and improved irrigation performance, will require more integration between irrigation management and natural resources planning, particularly regarding links between lowland and upland water catchment areas. Integrated water management must be extended outwards from areas with ground water problems, while forest and soil conservation efforts in adjacent low-potential areas must ensure sufficient water supplies for high-potential areas.

Adequate drainage is indispensable for controlling the water table to minimize waterlogging, reduce salt concentrations and prevent salinization in irrigated areas. Effective drainage should therefore be installed in existing command areas and future irrigation projects should only be initiated if provision for appropriate drainage is included at the design stage. Additionally, the wise and integrated use of surface and ground water should be the aim wherever feasible.

Judicious management of salt affected soils involves a package of practices including proper land levelling and preparation, application of amendments such as gypsum, leaching and drainage, improved agronomic and water management practices, and the selection of tolerant crops and varieties. However, the need exists for the development of cheaper and location specific techniques for both the reclamation of salt affected areas and the prevention of further salinization. (F.J. Dent 1996)

What is required is demonstration and not exhortation; location-specific practice as against generalized theoretical observation and an overall participatory mode.

Technology for Ecological Agriculture

Technology on the shelf ought to be re-examined in the light of Earth Summit criteria: enhancement of biological productivity per unit of land, water, and time, on an ecologically sustainable basis while providing access by small-scale producers. In other words, food should ideally originate from environmentally benign technologies that conserve and enhance the natural resources base of crops, animal husbandry, forestry, inland and marine fisheries.

Integrated Pest Management can increase yields and empower farmer peer-groups to make their own decision about micro agro-ecology of their farms, while reducing external dependence on soil and human health endangering costly chemical pesticides. In a similar vein, emphasis on integrated soil and plant nutrient management can achieve sustainability while maintaining productivity increase through greater use of legumes in cropping systems, organic recycling, green manuring, and use of biofertilizer with judicious supplement of minerals.

Looking Ahead

Decades ahead could see within Asia two models of development come into sharper focus. One may be seen in countries like Malaysia. Expanding industrial or services sector would provide increasing off-farm income opportunities. Agriculture will be reinforced by an expanding network of industries.

The other is in South Asia including continental India. The countries therein cannot, at the moment, offer viable alternatives to their massive rural populations. The jury is still out as to whether an alternative is emerging in India, since the government there embarked on broad-based liberalization programme. Meanwhile, pressure on already small land-holdings will build up further as the numbers of marginal and landless farmers climb.

These shifting patterns of change radically reshape the way policy-makers in Delhi and Manila and their partners in progress perceive and grapple with problems of sustainable agricultural growth, rural employment and food and nutritional security.

In their search for policies to usher them into the new millennium new and international policy-makers, and Asian farmers alike must cobble together the criteria of ecological sustainability, economic efficiency, social equity and popular participation into a coherent framework.

Resources-based rather than Commodity-based Agricultural Research Development

Agricultural research and development in Asia, in the previous decades, gave a major thrust to optimize the factors of production of market commodities and maximize profit at the farm level. In the process, there have been negligible attempts to perceive small farmers, particularly in areas that are not well-endowed, as those who try to minimize risk for food security reasons. Also areas with relatively less resources-endowment have been neglected along with their critically important crops like millet, pulses or sweet potatoes. Resource-based development in contrast could lead to the optimization of the use of specific resource-endowments of high-rainfall tropical systems, coastal systems and mountain systems, for example, in a sustainable manner for the livelihood security of the people who subsist on them. The rationale is obvious. The aim of the small-farm households who constitute the bulk of the rural resource-poor is not as much of maximizing returns from specific activity or commodity, but maximizing income and employment in a sustainable manner from the total resources, both bio-physical and human, to which they have access, through product-conversion and thereby value-addition. Every effort should be made to optimize this strength of diversity of sources of production, employment and income, through integrated use and management of resources. An integrated approach involving crop diversification (cereals and legumes) and livestock farming, agro forestry and aquaculture (including rice and fish culture) will be helpful in enhancing rural employment and income and in protecting the resource health.

Supportive Research Paradigm

Reorientation in research planning and programming is called for in the light of resource-use pattern emerging from different ecosystems and socio-cultural milieu of the small farm households.

First, due to the smallness of the size of farms, and the multiple uses to which resources are put, in order to generate income and employment, the technology required is that for the production system (product-mix) as a whole, and not for specific products and activities. The objective function is that of maximizing the biomass and value addition, rather than maximizing the output of specific commodities or activities. Even though the present commodity-oriented research will have to continue to secure quantum jumps in the output of individual commodities per unit of resource, research has to move in developing technologies to optimize income and employment under a product-mix regime for a given set of resources. Further, as the development strategy is to be attuned to specific resource endowment complexes (mountain systems, coastal systems, tribal systems, etc.) the research support has to be tailored to meet the sustainable use of the resource complexes. Therefore, research has to be reoriented on the basis of ecosystems (as resource complexes are better understood), rather than that of specific commodities.

The resource base of the small farms is heterogeneous. Farm research and technology development have to pursue a system rather than activity approach, tailored to specific biophysical and human resource endowments. Specificity refers not only to biophysical endowments, but also to socioeconomic conditions. Participatory research and training is a basic requirement for resource-based and people-focused development. New patterns of research organization, with scientists and farm families becoming partners in the development and dissemination of new technologies are to be evolved and the existing systems reoriented.

This is important for coalescing local knowledge with frontier technologies. Traditional technologies are environment-specific, less risky, eco-friendly and sustainable under low levels of production with respect to time and resource-use. Technology packages to be developed for different resource endowments should be a blend of traditional and frontier technologies, which integrate the ecological and social strengths of the former with the production potential, cost-effectiveness and consumer appeal for the latter, thereby mutually reinforcing the livelihood security of the rural families with the ecological security of the rural areas.

Frontier technologies which are suitable candidates for such blending include biotechnology, space technology, informatics, micro-electronics and management. Some of these technologies lend themselves to decentralized adoption, and if supported by a few centralized services, including training and appropriate public policies, can transform the face of rural Asia. The objective of research support is harmonized development of market-economy, livelihood economy and nature's economy.

Internalization of Technology by Resource-poor Farmers

Agriculture extension and development support-system which has hitherto been top-down and specific commodity/activity focused needs to be restructured in the participatory farming system mode in the context of ensuring livelihood security of resource-poor farmers. They need a basket of opportunities and choices to utilize the limited resources they have access to. Such empowerment is a continuum involving identification of technologies appropriate to specific agro-ecology of a farm and resource-endowment of the farmer, adaptation to both the bio-physical and socio-cultural conditions, internalization through hands-on experimentation, peer-group consultations, participatory training, and translation into production-activity by securing access to capital/credit, support for infrastructure, marketing and risk-aversion, and organisation for group action. The Biovillage Pilot project is an exemplary attempt towards achieving livelihood security of the resource-poor through technological empowerment (Annex 1).

A Proposed Integrated Intensive Farming System

Dr. Swaminathan has proposed an Integrated Intensive Farming Systems (IIFS) approach as a possible pathway towards sustainable agriculture in Asia rooted in the principles of equity, ecology, efficiency and employment. IIFS involves agricultural intensification, diversification and value addition. Thus, it can help improve both the physical and economic access to food and foster sustainable food security at level of each individual in a household. The objectives are threefold: 1) Increasing production, 2) Improving livelihood security through multiple sources of income and 3) natural resources conservation.

IIFS involves intensive use of the resources of the farm. To be ecologically sustainable, such intensification should be based on techniques which are knowledge rather than capital intensive and which replace to the extent possible, market purchased chemical inputs with farm grown biological inputs. Such a shift in the nature of the inputs used is brought about through integrated farming incorporating animal husbandry, farm forestry and agroforestry. This second element of the IIFS strategy provides scope for organic recycling. A third element of the strategy is value-addition to every part of the plant and animal biomass through the establishment of bio-refineries. On-farm and off-farm employment then can be linked in a symbiotic manner. In the case of farm women, who are invariably overworked because of their multiple roles in a household, IIFS aims to reduce the number of hours of work and add economic value to each hour of their work.

IIFS leads to resource-based, agriculture development planning. It involves soil health care incorporating various symbiotic and non-symbiotic nitrogen fixation. IIFS farmers will maintain a Soil Health Card to monitor the impact of farming systems on the physical, chemical and micro-biological components of soil fertility.

It emphasizes on water harvesting and participatory management by the user-communities. Crop and pest management practices such as Integrated Nutrient Supply and Integrated Pest Management will be adopted and their precise composition, chosen on the basis of the farming system and the agro-ecological and soil conditions in the area.

Beside the energy efficient systems of land, water, and pest management, every effort will be made to harness biogas, biomass, solar and wind energies to the maximum extent possible.

IIFS will produce and process value-added products from every part of the plant or animal. Post harvest technology assumes particular importance in the case of perishable commodities. IIFS will be based on both land-saving agriculture and grain-saving animal husbandry. Dryland farming, the reservoir of untapped production potential, will receive due attention. Soil conditions, water, agroclimatic feature, farmers' food security and market opportunities will determine the choice of crops.

Conclusion

"If a man takes no thought of what is distant", Confucius wrote once, "he will find sorrow near at hand."

Discerning the future, however, is a difficult task. There are too many unpredictables.

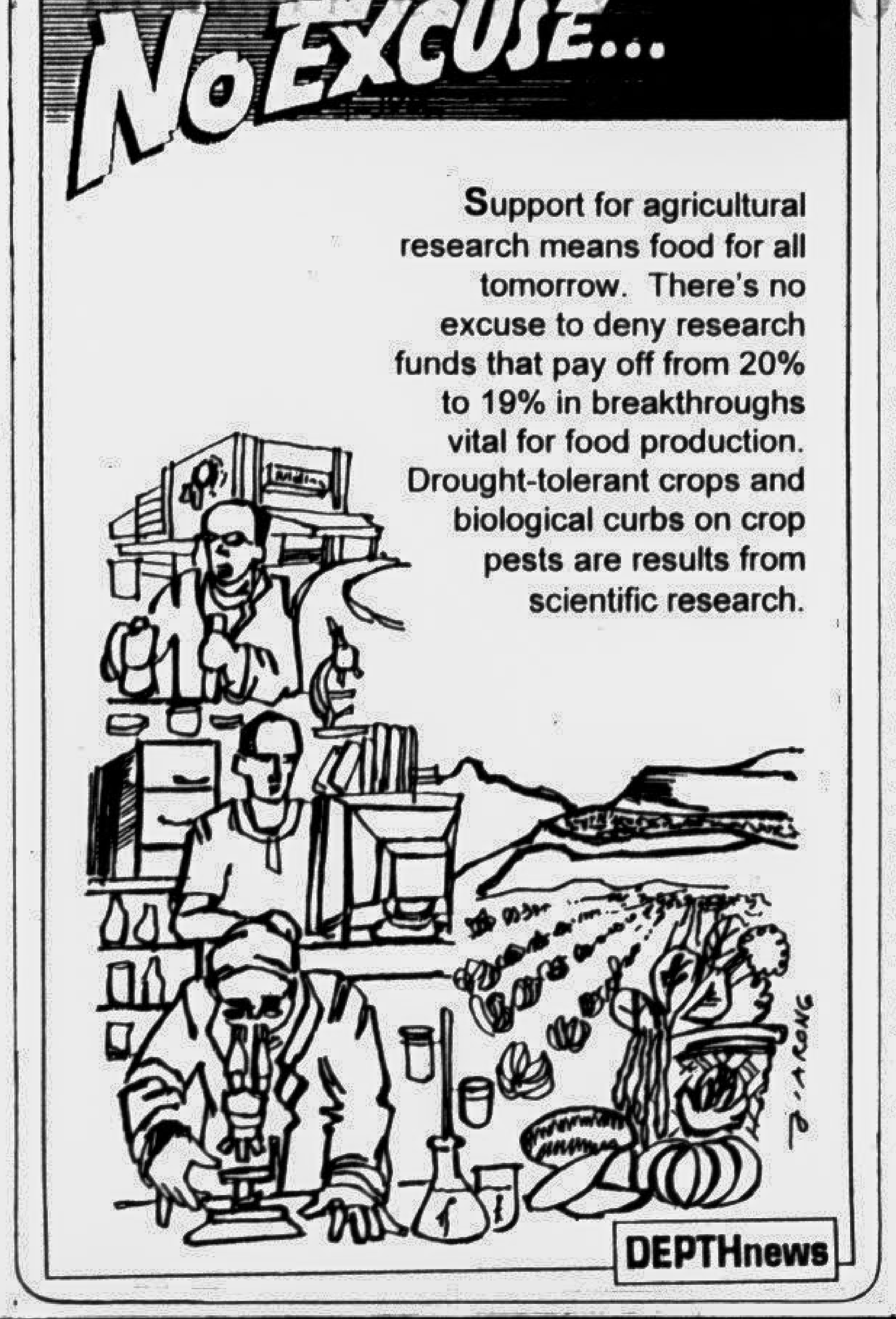
Yet, if the past reveals some glimpses of the future, Asian policy-makers and practitioners cannot rest on the laurels of spectacular advances in the preceding three decades. Food surplus can dissipate overnight from a failed monsoon or a protracted drought. The year 1995 saw the steepest rise in the price of rice, corn and wheat than any other time since the 1970's. Self-sufficient Indonesia and the Philippines were dunned with exceptionally high import-bills. And most recently the sceptre of the dust bowl of the thirties hung over the drought-stricken farmers in Kansas and Oklahoma, Texas and Colorado. Besides, shipping lanes to food warehouses in North America and Europe are long and vulnerable. Globally, stocks in granaries dwindled in 1995-96 to around 14 per cent of the trend-use much below the 18 per cent food security benchmark. Food stocks in Asia peaked to 133 million tonnes in 1992-93. For 1995, however, it is 8% less than the peak. Besides, a diminished resource-base must carry increasing loads from population growth.

Disparities between miniscule elites and the impoverished masses persist. They carry the potential for conflict.

In the decades ahead, the key to sustainable agriculture will revolve around the small farmers, their families and the increasing number of women-headed farmhouseholds. As the Human Development Report of 1996 notes: "An agricultural development strategy centered on small farmers rather than large simultaneously increases the social efficiency of resource use in agriculture and improves social equity through employment creation and the more equitable distribution that the small farms generate."

The question, however, is tension-filled because small-scale producers are increasingly aware that agricultural benefits, so far, have largely been creamed off by rural power-holders or articulate urban constituencies. Existing social structures often block them off from participating in decisions on resource allocations.

As a consequence, their productive potentials have not been fully tapped. Nor would they strive to conserve the life-support systems that form the base for food for the future. As enclosures of "Common Property Resources" and their own knowledge-system go ahead in tandem, they have little stake in a system that locks them and their children into stultifying redistribution of poverty.



Annex I : Bio Village

BIOVILLAGE is a pronature, propoor and prowomen development paradigm that seeks sustainable agriculture and rural development by concurrent attempting to resolve/mitigate the twin development concerns of the present time, viz. the creeping degradation of the resource base and the persistence of rural poverty with/through technologies and interventions which are environment friendly/ecologically compatible, economically viable and socially equitable.

Biovillage paradigm/ approach seeks to: i) mitigate resource degradation through the integrated use and management of both the biophysical resources (land and water) and the human resource, to which the rural households have access individually (farm/households) and communally (common property resources as well; and

ii) alleviate rural poverty by accessing the resource-poor to technology and new skills for income and deployment generating activities through technological and organisational empowerment.

iii) promote the growth of ecologically, economically and socially sustainable villages.

Integrated use and management of resources enables to maximise income and employment sustainably from both biophysical and human resources through product conversion and value addition. The objective is to maximise total income (output and employment) per unit from the resources (both biophysical and human) by producing commodities to which the resources (both biophysical and human) by producing commodities to which the resources are capable of and have a market; and not solely to maximise the output of specific commodities and products such as paddy, sugarcane, milk, etc. per unit of resource (or the productivity) often irrespective whether the resources or not). Concurrently the design for resource management systems includes the productive use of unutilised/under utilised common proper resources (grazing lands, waterspreads).

Further, the sustainable development of the entire bio-physical resources over which the community exercises control or depends for sustenance, is ensured by designing resource management systems for a spatial natural resource entity such as watersheds and planning for facilitating institutions, infrastructure and support services for the community which utilises these resources.

Mitigation of persisting rural poverty is addressed through technological empowerment of the resource-poor and accessing the usufruct of the common property resources exclusively to the resource-poor.

Technological empowerment is and integrated process consisting of six steps; viz.

i. Identification of environment friendly, economically viable, socially acceptable technologies and interventions;

ii) Adapting them to not only to the biophysical conditions, but also to the specific socio-economic conditions especially tailoring the scale of operation to resource access and management skills; internalisation through training and skill importation;

iii) Translating technology into production and employment generation activities by accessing to capital;

iv) Facilitating production through support services and access to infrastructure; and

v) Fostering group action to bring about cost-effectiveness in the use of infrastructure and support services, to facilitate easy access to institutional credit, to ensure sustainable management and access to usufruct rights of the common property resources, and to promote the environment that facilitate total human development.

Further, the strategy is to access the resource-poor to a basket of income and employment opportunities and facilitating the choice consistent with the resource availability, skill attainments and management capabilities of the participants.

Strategies to realise biovillage paradigm: The biovillage strategies proposed for sustainable agriculture and rural development are realised through:

i. Designing, testing and adopting resource use and management models (farm/household) under different biophysical (micro agroecological resource endowments) and socio-economic conditions (size of holdings, off-farm employment opportunities, work ethics) incorporating management systems of sustainable resource use (agronomic management, soil and water management, integrated nutrition management and integrated pest management) to increase the productivity of the basic resources viz. land and water and human labour and thereby fostering the integrated resource use and management.

ii. Developing common property resources concurrently ensuring that the resource poor are accessed to the usufructs;

iii. Promoting facilitating institutions and infrastructure in support of resource development;

iv) Improving the quality of rural life by ensuring environmental sanitation, drinking water, primary health and basic education;

v) Promoting income and employment generating activities of the resource poor based on locally available resources.

vi) Establishing biocenters to test, adapt and demonstrate technologies and interventions, to provide information and some basic support services, and to serve as a focal point for group action for the participants; and

vii) Promoting group action for all interventions all full interventions and full involvement of the participants at all levels of planning and implementation. ***(Concluded)***

The Daily Star Entertainment Guide

Thursday 20th February
(All programmes are in local time. There may be changes in the programmes)

BTV

3:00 Opening Announcement Al-Quran, Programme Summary **3:10** News in Bangla **3:15** Retelecast of selected programme from TV Archive **4:00** News in Bangla **4:15** TV Couching **4:45** Carton: Shazzam **5:25** National Television School Debate **6:30** Sor Goal **6:50** Religion and Life **7:00** The News **7:25** Sandha Malatee **8:00** News in Bangla **8:25** Arabian Nights **9:00** Package Programme **10:00** The News **10:25** Switch **11:30** News in Bangla **11:35** Friday's programme summary **11:40** Close down

BBC

06:00am BBC World News **06:10** Newsnight **07:00** BBC Newsroom inc. World Business Report/Asia Today /24 Hours **10:00** BBC World Headlines **10:05** World Focus: The Giant Awakes **11:00** BBC Newsday **2:00** BBC World Headlines **02:05** World Focus: BBC Global Report **03:00** BBC World News **03:30** Time Out: Holiday **04:00** BBC Newsdesk **06:00** BBC World Headlines **06:05** World Focus: Horizon **07:00** BBC World News **07:15** World Business Report **07:30** BBC Newshour Asia & Pacific **08:30** Time Out: Top Gear **09:00** BBC World Headlines **09:05** World Focus: The Giant Awakes **10:00** BBC World News **10:30** Time Out: Film '97 **11:00** BBC World News **11:30** Time Out: The Clothes Show **12:00** The World Today **02:00** BBC World Headlines **02:05** World Focus: Correspondent **2:50** Earth Report **03:00** BBC World News **03:30** Time Out: Tomorrow's World **04:00** BBC World Report inc. World Business Report/24 Hours

CHANNEL V

6:30am Frame By Frame **7:00** Rewind VJ Sophiya **8:00** Frame by Frame **9:00** Jump Start VJ Alessandra **10:00** Frame By Frame **11:30** The Vibe VJ Luke **12:00noon** Rewind VJ Sophiya **1:30** By Demand VJ Trey **2:00** Frame by Frame **2:30** First Day First Show **3:00** BPL Oye **4:00** Planet Ruby **4:30** Big Bang VJ Alessandra **6:00pm** Rewind VJ Sophiya **7:00** By Demand VJ Trey **8:00** The Vibe **9:00** Videocon Flashback **9:30** Top of the Pops **10:00** First Day First Show **10:30** Malibu Jammin **11:00** Classic Rock **12:00mn** Big Bang VJ Alessandra **1:00** Haysah **2:00** By Demand VJ Trey **3:00** Big Bang VJ Alessandra **4:30** BPL Oye **5:30** Jump Start VJ Alessandra

STAR PLUS

630am Ninaad **7:30** Star News **8:00** Sky Business News **8:15** Business Agenda **8:30** Star News **9:00** Sky News **9:30** Aerobics Oz Style **10:00** Master Chefs of the Florida Culinary Institute **10:30** E! Behind The Scenes One Fine Day **11:00** Kate & Allie **11:30** The Oprah Winfrey Show **12:30** Serial: Pickat Fences **1:30** Santa Barbara **2:30** The Bold & The Beautiful **3:00** Hindi Serial: Tehkikaat **3:30** Hindi Serial: Khandaan **4:00** Banjara Guest House **4:30** Land of the Giants **5:30** Black Beauty **6:00pm** Kate & Allie **6:30** Master Chefs Of Florida Culinary Institute **7:00** Manaka's Ark **7:30** Star News (Hindi) **8:00** Awaz **8:30** Hindi Serial: Tu Tu Main Main **9:00** Hindi Serial: Ghutan **9:30** Star News **10:00** Are You Being Served? **10:30** Baywatch **11:30** The Bold & The Beautiful **12:00mn** Santa Barbara **1:00** Star News **1:30** Baywatch Nights **2:30** Mystery Movies — Inspector Morse "Cheribim & Seraphin" **4:00** The Oprah Winfrey Show **5:30** Barnaby Jones

STAR SPORTS

6:30am ISU Skating Japan/Russia Wrap Up **7:30** Asian Honda Classic Final Day H/L **8:30** ISF World Tour **9:00** Inside PGA Tour **9:30** 5 Nations Championships Ireland v England **11:00** 5 Nations Championships France v Wales **12:30noon** Spanish F'ball League H/L **1:00** BT Global Challenge **2:00** Johnnie Walker Classic 1997 Final Day **4:30** Trans World Sport **5:30** Volvo World Cup Showjumping '96/97 **6:30pm** World Wrestling Federation Raw **7:30** Women's World Squash Championships **8:30** Watersports World **9:30** Thai Kickboxing **10:30** World Cup Hall Of Fame **11:00** US PGA Tour United Airlines Hawaiian Open Day 1 **12:30** Spanish F'ball League H/L **1:00** World Wrestling Federation Raw **2:00** Indian Open Badminton Final Day

STAR MOVIES

7:30am Thriller : Invitation To Hell 15 (Arabic Subtitles) **9:30** Adventure : Vigilante Cop 15 (Arabic Subtitles) **11:30** Classic: All About Eve G (Hindi Subtitles) **1:30** Family : Mermaids 15 (Hindi Subtitles) **3:30** Family : Breaking Free 12 (Hindi Subtitles) **5:30** Action : The Battle Of Algiers 15 (English Subtitles) **7:30** Family : Widow's Peak 12 (Hindi Subtitles) **9:30** US Top Ten **10:30** Romance: Salt On Our Skin 15 (Hindi Subtitles) **12:00** Western : Tombstone 18 (Hindi Subtitles) **2:00** Thriller The Jigsaw Murders 18 (Arabic Subtitles) **4:00** Action: Blood Money 18 (Arabic Subtitles) **5:30** Classic : Sanjuro 12 (English Subtitles)

ZEE TV

5:00 Jagran **5:30** Suno Bhai Sadho **6:00** News **6:30** Jagran **7:00** ZED **8:30** Disney Hour **9:30** Hindi Feature Film Show **12:00** Gaane Anjaane **12:30** Mast Mast Hai Zindagi **1:00** ZED **1:30** Asian Sky Shop **2:00** Hum Paanch **2:30** Tara **3:00** Raahat **3:30** Low Cal Show **4:00** Helpline **4:30** Mere Ghar Ana Zindagi **5:00** ZED **5:30** Siyaram's Cine Magic **6:00** Jhatpat Khana **6:30** Disney Hour **7:30** Raahat **8:00** Gaane Anjaane **8:30** Chutki Baja Ke **9:00** Yeh Kahan Aa Gaye Hum **9:30** Dastaan **10:00** Umeed **10:35** News **11:00** Pakeezah/Ek Nazar **11:30** Nirma Hum Paanch **12:00** Apcolite Aap Ki Pasand **12:30** Daraar **1:00** Hasratein **1:30** Raahat **2:00** Suno Bhai Sadho **2:30** TMM **4:00** Tara **4:30** Insight

EL TV

07:30 Pyar Hi Pyar **08:00** Hindi Feature Film **11:00** Nukkad **11:30** Shatranj **12:00** Top of the Tops **12:30** Brigadier Balwant **1:00** Bengali Serial **1:30** Bengali Serial **2:00** Special **3:00** Amar Prem **3:30** Chehere **4:00** Akanksha **4:30** Song Yatra **5:00** Dear EL **05:30** Special **6:30** Sorry Meri Lorry **7:00** Bengali Serial **7:30** Bengali Serial **8:30** TBA **8:30** Public Dimand **9:30** Gambler **10:00** People's Club **10:30** Hindi Feature Film **1:30** Tarane Aur Fasane **2:30** Party Time

PTV

8:00am Tilawat Aur Tarjuma/Hamd/Naat **8:20** Cartoon **8:30** Khabrain **8:45** Cut Piece **9:20** Aahang & Roshni **9:45** Phool Chandi **10:05** Sona Chandi (Drama Serial) **10:30** Buttons & Rustys (Eng. Film) **10:55** Milli Naghma **11:00** Khabrain **11:10** Aabshaar (Music Programme) **11:55** Tele Play (Drama Serial) **12:45pm** Qawaali **12:55** Quran-e-Hakeem & Bismillah **1:15** Muqaddar (Drama Serial) **2:00** Putjhar (Drama Serial) **2:45** Perspective & Health Forum **3:40** Taleemi Maloomat **4:35** Aurat Aur Qanoon **5:05** Home Economics **5:25** Humaray Saath **5:55** Varna (Drama Serial) **6:25** Aiou Courses **7:05** Muqabil Hai Aaina **7:20** Ainaik Wala Jinn **7:45** English News **8:05** Jawaan Sangeet **8:45** Eendhan (Drama Serial) **9:00** Break for Headline News **10:00** Khabarnama & Commercial News **10:35** Mast Mast Sanyo **11:15** Urdu Feature Film & Khas Khas Khabrin/Close down

SONY ET

8:30am Yaadon Ki Baarat **9:00** The Three Stooges **9:30** Dennis The Menace **10:00** I Dream Of Jeannie **10:30** Surf-Wheel Of Fortune (Game Show) **11:00** O'Maria (Serial) **11:30** Apne Jaise Types (Serial) **12:00** 5 Star Xpressit **12:30pm** Chamatkaar (Serial) **1:00** Anarth (Serial) **1:30** The Young And The Restless **2:30** Cine Matinee-Hindi Feature Film **5:30** The Three Stooges **6:00** Dennis the Menace **6:30** Yadon Ki Barat **7:00** Premier **7:30** I Dream of Jeannie **8:00** Surf-Wheel Of Fortune (Game Show) **8:30** Buddha (Serial) **9:00** Sidhi (Serial) **9:30** Hospital **10:00** Aahat **10:30** Janee Kaha Mera Jigar Gaya Ji (Serial) **11:00** The Young And The Restless **11:30** Yeh Sadi Nahi Ho Sakti (Serial) **12:00** Pehli Mulakat **12:30** Sunday Ki Sunday **1:00** Nirlop Rasoi Show **1:30** Surf-Wheel Of Fourtune (Game Show) **2:00** Premier **2:30** Closed

DD 7

10:30 Janmadin **10:35** Classical Music **11:00** Dance **12:00** ETV Programme **12:30** Monorama Cabin **1:00** Janmabhumi (Serial) **1:30** Trishna (Serial) **2:30** Darpan (Serial) **3:00** Eto Tuku Basha (Serial) **3:30** Shreoshi (Serial) **5:30** News **6:30** Mone Rekho More Gaane **7:00** Darsaker Darbare **7:30** Bangla Sambad **8:00** Salbone Katha (Serial) **8:30** Chetana (Serial) **9:00** Janmabhumi (Serial) **9:30** Monorama Cabin (Serial) **10:00** Bengali Movie Club Film Show **1:00** Closed

ZEE CINEMA

6:45 Songs **7:00** Kagaz Ki Nao (Sarika, Raj Kiran) **9:00** Zandu Filmi Baatein **9:30** Param Dharam (Vishal C, Kumud C) **12:15** Reruns **12:30** Takkar (Jeetendra, Jaya P) **3:15** TBA **3:45** Jeevan Dhara (Rekha, Raj Babbar) **6:30** Bommai Barassu Jeevathan (Kannada) **9:15** Cinema Cinema **9:30** First Take **10:00** First Love Letter (Manisha K, Vivek M) **12:45** Samarambam (Telugu) **3:30** Hit Thai Hit Hai **4:00** Gora Aur Kala (Rajendra K, Hema M).