CHAPTER – IV

Department of Scientific and Industrial Research

4.1 Public Private Partnership for setting up 'The Centre for Genomic Application' by Institute of Genomics and Integrative Biology

Institute of Genomics and Integrative Biology (IGIB) signed an agreement with the Institute of Molecular Medicine (IMM), a private partner for setting up 'The Centre for Genomic Application' (TCGA). IGIB did not follow due diligence before selecting the private partner. The agreement with IMM did not have adequate provisions for safeguarding interests of Government. TCGA could not achieve self-sufficiency, as envisaged. The pricing policy for its services was uneconomical. The financial practices of TCGA leaned in favour of the private partner, as apparent from undercharging of services rendered, booking of expenditure unrelated to TCGA in its accounts and not charging the partner for use of equipment belonging to IGIB. The monitoring mechanism established for TCGA was lax. Advisory Council of TCGA did not issue the policy framework and guidelines for operation of TCGA by the private partner. The objective of TCGA becoming a national research facility and a shared resource for use by universities, industries and laboratory groups remained largely unachieved. The activities of TCGA were suspended in August 2011.

4.1.1 Introduction

The Institute of Genomics and Integrative Biology, New Delhi (IGIB), a constituent laboratory of Council of Scientific and Industrial Research (CSIR), New Delhi under the Department of Scientific and Industrial Research (DSIR) focuses on biological research and development especially in the areas like genomics[52]and proteomics[53].

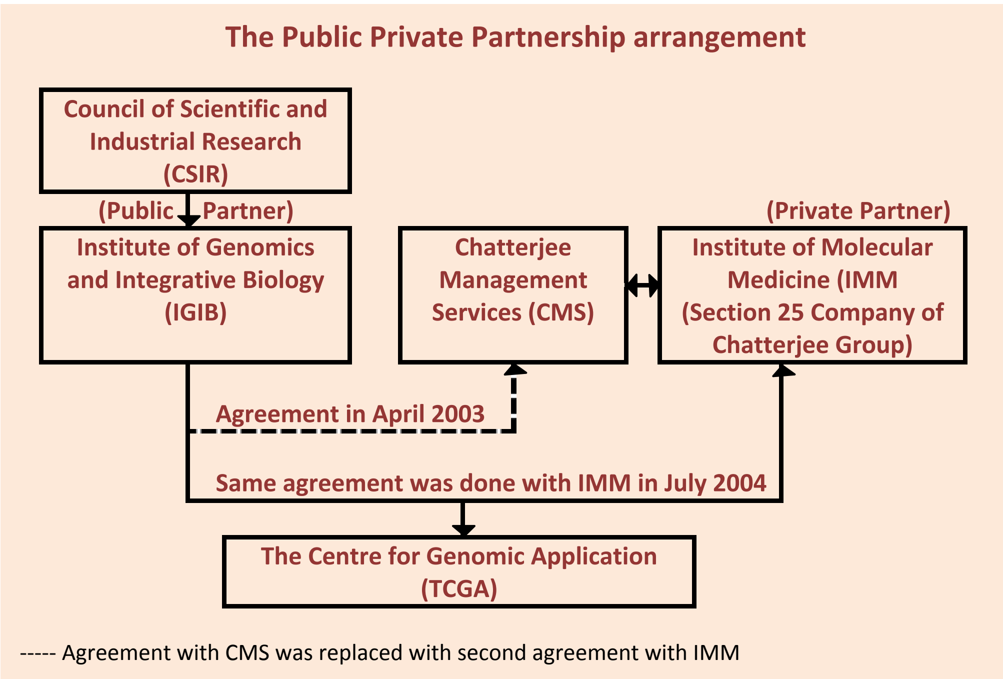
The Institute entered into a Public-Private Partnership (PPP) agreement in April 2003, with a private company, Chatterjee Management Services (CMS), to establish The Centre for Genomic Application (TCGA). Later (July 2004), at the request of CMS, the institute replaced said agreement by entering into another agreement with Institute of Molecular Medicine (IMM), a sister company of CMS, on the same terms and conditions.

[52] Genomics is a discipline in genetics concerning the study of the genomes of organisms.
[53] Proteomics is the large-scale study of proteins, particularly their structures and functions.

The stated objectives of this facility were to:

- **Create infrastructure** at par with the best international research facilities to provide support to Research and Development (R&D) institutions, Universities (small laboratories) and industry to promote easily affordable genome and proteome research in the country;
- **Develop and operate the facility as a national facility** and as a shared resource for use by universities, industry and laboratory groups;
- **Provide incubation laboratory facilities** to start up entrepreneurs in biological sciences with minimum capital investment thereby enabling development and transfer of technologies through R&D partnership with industry, universities and CSIR/IGIB;
- **Develop human resource** and provide hands on training to scientists/technical personnel in genome and proteome research;
- **Operate TCGA** on charge for service basis.

TCGA began its operations from 11 May 2004 and after operating for about seven years, its activities were temporarily suspended on 31 August 2011 citing administrative reasons. The PPP arrangement of TCGA is depicted as below:



The audit of this facility was conducted with a view to evaluate and assess the performance of the PPP arrangement of TCGA including process of selection of partner, financial arrangements, activities and extent to which its objectives as envisaged were fulfilled for 2004-05 to 2011-12. Audit examined records relating to TCGA maintained by IGIB as well as the private partner IMM.

Chronology of events leading to setting up of TCGA

Date	Event
December 2000	The Chatterjee Group expressed its interest to the Minister of Science and Technology in setting up a world class research facility in Genomics and Proteomics in joint collaboration with Department of Bio-technology.
March 2001	The Chatterjee Group again expressed its interest to the Secretary, Department of Biotechnology and IGIB in setting up the facility in collaboration with Department of Bio-technology.
February 2003	IGIB commissioned an industry analysis of custom laboratory products and services in the area of genomics and proteomics through a Consultant (Ernst and Young).
April 2003	CSIR approved the proposal for setting up of proposed Core Shared Research Facility with the Chatterjee Group.
April 2003	IGIB entered into an agreement with Chatterjee Management Services for setting up of Core Shared Research Facility called The Centre for Genomic Application.
June 2003	Ernst and Young submitted its report, which identified 12 companies both multinational and Indian, which were operating in the same field in the market. Market size was estimated to be worth ₹80 to ₹100 crore and was expected to grow by 400 *per cent* within a period of seven years i.e. from 2001 to 2007.
July 2003	IGIB submitted a proposal to Department of Science and Technology for funding of its share in the PPP.
January 2004	Pending construction of TCGA building on land provided by CSIR, private partner hired a space of 6,600 sq.ft. at Okhla for operation of TCGA activities.
February 2004	The Government share of ₹11.30 crore in the PPP was approved by Department of Science and Technology.
May 2004	Operations of TCGA begin.
July 2004	IGIB, on the request of Chatterjee Management Services, signed an agreement with Institute of Molecular Medicine, a Section 25 company of the Chatterjee Group, replacing the earlier agreement with Chatterjee Management Services for undertaking the project on the same terms and conditions.
May 2006	The Government share was subsequently revised to ₹13.55 crore due to increase in cost of equipment because of foreign exchange fluctuations.
August 2011	Activities of TCGA were suspended reportedly due to delays in completion of TCGA building and to save the huge cost of rental on hiring premises.

4.1.2 Selection of partner

As stated earlier, The Chatterjee Group, a private group having investments in Indian and international companies in the bio-technology sector, approached (March 2001) Department of Bio-technology (DBT) and IGIB for setting up a world class research facility in Genomics and Proteomics in collaboration with Department of Bio-technology. CSIR approved (April 2003) the proposal following which IGIB entered (April 2003) into an agreement with Chatterjee Management Services[54] (CMS) for setting up of Core Shared Research Facility to be called as The Centre for Genomic Application (TCGA).

Earlier (February 2003) IGIB had commissioned a consultant (Ernst and Young) to conduct an industry analysis of custom laboratory products and services in the area of genomics and proteomics. The Consultant submitted its report (June 2003) and identified 12 companies[55] both multinational and Indian, which were operating in the same field in the market. Market size was estimated to be worth ₹80 to ₹100 crore and was expected to grow by 400 *per cent* within a period of seven years i.e. from 2001 to 2007. It was observed that IGIB selected the partner in April 2003, without waiting for the Consultant's report.

Thus while selecting the partner for the national level facility, due diligence process for identification of the project, conducting a feasibility study to determine the market size and growth, detailed project report, parameters for selection of partner, list of possible partners and transparent procedure for selecting the partner was not done.

CSIR stated (April 2010) that selection of the partner was on the basis of their credentials world-wide in the field of Genomics and no bidding system could have brought out such a partner willing to invest in scientific infrastructure in the country.

CSIR's reply is not acceptable as it was seen from the Consultant's report (June 2003), that there were at least a dozen companies of equal repute in this field. IGIB did not invite offers from these entities before signing the agreement with CMS and selected the private partner for the project without following a transparent and competitive process.

[54] A company of The Chatterjee Group

[55] Messrs.Hysel India Ltd., Labmate (Asia) Ltd., Sigma Aldrich, Qiagen, Genetix, Microsynth, Stratagene, Invitrogen, Promega, Amersham Plc., Bangalore Genei Pvt. Ltd. and BioServe Biotechnologies Ltd.

4.1.3 Agreement with Private Partner

Although IGIB had entered into an agreement with Chatterjee Management Services (CMS) in April 2003 for setting up of TCGA, but at request of CMS the same was replaced (July 2004) with another agreement with Institute of Molecular Medicine (IMM), a Section 25 Company[56] of the Chatterjee Group for undertaking the project on the same terms and conditions.

The salient features of agreement with the private partner were as follows:

- IGIB would provide land for TCGA building and install 10 major equipment/ facilities
- IMM would provide ₹12.50 crore including capital of ₹ 10 crore (₹ nine crore for building and ₹ one crore for equipment) and recurring cost of ₹2.50 crore.
- TCGA would provide services on a fee basis and generate adequate resources to become self-sustaining from the second year onwards.
- With regard to facility management, IMM would have full rights in all matters relating to finance, legal and appointment of manpower of TCGA.
- Two bodies i.e. Advisory Council and Monitoring Group with members of CSIR, IGIB and IMM would be constituted to oversee activities of TCGA.
- In case of premature termination of the project, ownership of equipment/ facilities procured out of CSIR/IGIB funds would remain with CSIR/IGIB and the equipment procured from the income of TCGA would remain as joint property of IMM and CSIR/IGIB. The building of TCGA would be transferred to CSIR/IGIB on payment of its book value to IMM.

Audit found following deficiencies in the agreement:

- Proper structure of TCGA in the form of a separate legal entity such as Partnership firm/Company under Companies Act or Society under Society Act or any other form of special purpose vehicle was neither defined nor formed.
- The clauses in the agreement were not framed in a manner whereby the risk involved in the PPP arrangement to both parties would be identified or shared in a balanced manner. As per the agreement, liability of IMM if

[56] Section 25 companies are non-profit oriented companies, formed for the sole purpose of promoting commerce, art, science, religion, charity or any other useful object. Such companies are required to apply their profits, if any, or other income only in promoting their objects and are also prohibited from payment of dividends to their members.

any, due to operation of TCGA were to be restricted to a total of ₹3.50 crore over the project duration, however no such limit was kept for IGIB. Further, though the facility was planned to be established in New Delhi, cost of land provided by IGIB was not included in the project outlay.

- There were no terms and conditions in the agreement compelling IMM to reinvest the income generated from operation of TCGA for its financial growth, thus leaving scope for diversion of income earned from TCGA by IMM to its other projects.

- The agreement had no penalty clauses in case of deficiencies in fulfilling the conditions agreed in the PPP agreement by the private partner.

- The agreement did not provide for an alternative plan to meet requirement of resources in case TCGA did not become self-sufficient.

- No provision was made for preparation of separate books of accounts of TCGA to depict its operational results and financial position. Provisions for adequate oversight and audit were also not incorporated in the agreement.

IGIB, while accepting the lacunae in the agreement, stated (November 2009) that the agreement would be amended by defining the role and responsibilities of the two parties in more clear terms, particularly with respect to financial liabilities/obligations/responsibilities. However, the stated amendments in the agreement were not made (March 2012). TCGA's activities were suspended with effect from 31 August 2011.

Regarding reinvestment of income into TCGA, it stated that IMM, being a Section 25 company, could not have taken out the revenue from the system. All the revenue generated under the activity after meeting its costs of operation was expected to be reinvested.

The reply of CSIR is not acceptable since TCGA was not a Section 25 company; it was only a project of IMM. Hence, the possibility of diversion of TCGA's income by IMM to its other projects could not be ruled out. As the accounts of TCGA were merged in the accounts of IMM and not compiled separately, this could not be conclusively verified.

4.1.4 Funding Arrangements

As per the agreement IMM committed ₹12.50 crore (₹nine crore on building construction, ₹one crore on equipment and ₹2.50 crore on recurring expenditure) and CSIR/IGIB was to bring in all major equipment necessary for the facility. The estimated value of the equipment to be provided by IGIB was not specified in the agreement.

IGIB submitted a proposal to the Department of Science and Technology (DST) in July 2003 for funding the government share in the PPP. IGIB however, did not intimate DST about the agreed share of private partner in the project. The government share was approved by DST in February 2004 as ₹11.30 crore[57] with scheduled completion in February 2005, which was subsequently revised to ₹13.55 crore by increasing the DST's contribution by ₹2.25 crore[58] (May 2006) with scheduled completion of the facility by March 2007.

Thus, the total outlay was ₹26.05 crore as below:

(₹in crore)

Table 8- Distribution of government and private share in setting up of TCGA

		Government share	Private share	Total
Capital	Building	0.00*	9.00	9.00
	Equipment	13.00**	1.00	14.00
Recurring		0.55	2.50	3.05
Total		**13.55**	**12.50**	**26.05**

*Land for proposed building was to be provided by IGIB, cost of which was excluded.
**Financial value of equipment was not defined in the agreement.

4.1.5 Financial performance and working results

IMM was fully responsible for operating TCGA, yet it did not maintain separate accounts for TCGA and instead, merged the transactions pertaining to TCGA in its own accounts. Audit was provided extracts of accounts relating to TCGA for 2004-05 to 2010-11.

After commencement of audit of PPP project of TCGA by the C&AG of India, IGIB got the extracted accounts of TCGA audited for the years 2009-10 & 2010-11. The auditors had submitted their audit report which was not accepted by IMM till March 2012. The audit report was not made available to Audit.

[57] Share of DST, CSIR and IGIB were ₹ six crore, ₹2.72 crore and ₹2.58 crore (including recurring cost of ₹0.55 crore) respectively.
[58] Citing reasons of foreign exchange fluctuation in the cost of the equipment

The working results of TCGA during 2004-05 to 2010-11, as seen from the extract of TCGA accounts were as under:

(₹in crore)

Table 9- Financial performance of TCGA during 2004-11

Year	Turnover	Expenditure	Profit / (Loss)	Percentage Profit/ (Loss)
2004-05	1.12	2.25	(1.13)	(100.89)
2005-06	3.65	3.91	(0.26)	(7.12)
2006-07	6.62	6.23	0.39	5.89
2007-08	8.35	8.45	(0.10)	(1.20)
2008-09	8.93	8.50	0.43	4.82
2009-10	6.97	9.96	(2.98)	(42.75)
2010-11	4.80	7.71	(2.91)	(60.63)
	40.43	**47.00**	**(6.57)**	

As seen from the above table -

- In five years out of seven, TCGA suffered losses ranging from one to 101 *per cent* of its annual turnover.
- The performance of TCGA peaked during 2006-07 and 2008-09 but declined steadily thereafter during 2009-10 and 2010-11.

Thus, TCGA could not become self-sufficient even after seven years of operation, though as per the agreement it was expected to become self sustaining from the second year onwards.

4.1.6 Implementation of the project

The following deficiencies and irregularities in implementation of the project were noticed.

4.1.6.1 Irregular booking of expenditure on building

In terms of the agreement, IMM was required to construct TCGA building at a cost of ₹ nine crore from its own resources. IMM borrowed loans from banks for meeting this commitment and booked interest and loan-processing fees of ₹4.98 crore accrued on the borrowed funds as part of its contribution, which was incorrect. This was included in the total expenditure of ₹16.11 crore stated to have been incurred by TCGA upto 31 March 2011.

TCGA replied (December 2009) that all the interest and processing fee charged in construction would be adjusted. However, reversal of such booking was not done (March 2012).

4.1.6.2 Excess payment of Project Management fee

For developing the concept, designing and construction management of TCGA building, IMM engaged the services of its sister concern TCG Developments India Pvt. Ltd. (TCGD). A Development Management Agreement was signed between IMM and TCGD in February 2004 (even before agreement with IGIB for setting up TCGA was made), which stipulated that TCGA building was to be completed within time schedule of 18 months[59], for which a total fee of ₹83 lakh[60] was to be payable to TCGD. The agreement further stated that if the project was delayed beyond the stipulated period of 18 months due to failure on the part of IMM, then monthly fee at the rate of 75 *per cent* of normal monthly fees (i.e. ₹1.50 lakh per month) would be payable to TCGD for such period of delay.

Audit observed that due to delay in receiving the statutory approvals, construction work of TCGA building was hampered. The project management fee which was required to be paid to TCGD at reduced rate of ₹1.50 lakh per month beyond July 2005 was instead, enhanced by IMM to ₹3 lakh and ₹4 lakh per month in December 2005 and February 2007 respectively, without any justification and assessment of work.

Between August 2005 and September 2010, a total payment of project management fees of ₹1.77 crore[61] was made to TCGD at enhanced rates, which was in excess of admissible amount by ₹85.50 lakh.

Audit further noted that IGIB did not see any conflict of interest in allotment of work of design and construction management of TCGA building by IMM to its sister concern. The rates and terms were disproportionately advantageous to TCGD as the exit clause of agreement signed between IGIB and IMM permitted reimbursement by IGIB of all such charges as discussed above, as a part of book value of the building, in the event that it is taken over by IGIB due to winding up of the project. The total payment/debits of ₹3.25 crore made up to 31 March 2011 towards design and construction management etc. of TCGA building worked out to more than 36 *per cent* of original estimated cost of building. The building still remained under construction (March 2012).

TCGA accepted (March 2012) the audit observation and assured that necessary adjustments would be made in due course of time.

[59] From 01 February 2004 to 31 July 2005
[60] ₹47 lakh for designing and ₹36 lakh as monthly fee at ₹ two lakh per month for 18 months
[61] excluding Service Tax of ₹20.01 lakh

4.1.6.3 Avoidable expenditure due to excess payment of rent

Pending construction of TCGA building, IMM hired a space of 6,600 sq.ft. at Okhla in January 2004. In this regard, IMM signed three separate agreements[62] with the owner on a total monthly rental of ₹3.17 lakh for three years with condition that each agreement would be renewed for next two terms of three years each on the same terms and conditions, subject to payment of escalation at the rate of 15 *per cent* on the last paid monthly rentals.

Audit observed that after expiry of first term of agreements, IMM renewed the agreement (March 2007) with the owner, merging all three previous agreements into one. As per new agreement, a monthly rental of ₹5.61 lakh was fixed for hiring of premises, facilities and maintenance of hired facilities, which was 77.53 *per cent* higher than the last monthly rental paid by TCGA. As a result, TCGA incurred an expenditure of ₹3.18 crore during March 2007 to August 2011 on account of rental charges, of which ₹1.15 crore was paid in excess, due to its failure to invoke the clause of renewing the earlier agreements instead of entering into a fresh agreement.

CSIR stated that the landlord refused to renew the agreement unless the enhanced rates were paid and IMM did not have unilateral rights to enforce its renewal. The reply was not acceptable as IMM did not invoke the relevant clause of the agreement which provided that the rent would be escalated upto only 15 *per cent* of the last paid monthly rentals.

Thus, TCGA incurred an avoidable expenditure of ₹1.15 crore which had a negative impact on its financial position.

4.1.6.4 Irregular allocation of government space to private partner

As stated in para 4.1.6.3, IMM hired (January 2004) a space of 6,600 sq.ft. on the ground and first floor of a building at Okhla to run TCGA activities. Later (March 2005), IMM assessed additional requirement of 1,000 sq.ft. for TCGA and hired (May 2005) space of 4,300 sq.ft on third floor of the same building. As this space was in excess of TCGA's requirement, IGIB on the request of IMM, hired (May 2005) the extra space of 3,800 sq.ft for installing its super computer.

Although CSIR had instructed (March/May 2005) IGIB to seek approval of the Governing Body of CSIR for hiring the space, but IGIB did not obtain the

[62] (i) Hiring of premises, (ii) Hiring of facilities viz. air conditioning for the occupied leased space, diesel generator set, fire-fighting equipment etc. and (iii) Maintenance of hired facilities on monthly rental of ₹1.80 lakh, ₹0.83 lakh and ₹0.54 lakh respectively

required approval. The rent of ₹46.21 lakh paid upto July 2007 was therefore irregular.

In the meantime CSIR allocated (May 2006) a space of 14,000 sq. ft. to IGIB at its Naraina campus. IGIB, however, did not vacate the rented space and instead, allotted (July 2007) 3,500 sq.ft of its allotted space at Naraina to IMM without obtaining the approval of CSIR.

CSIR stated (April 2010) that if the space was not hired for the super computer, Government would have to bear the depreciation on the equipment without its utilisation. It further added that on getting allocation of space at Naraina, IGIB stopped payment of rent to IMM.

The reply is not acceptable, as IGIB did not have power to allocate government space to private party without approval of CSIR.

4.1.6.5 Installation of equipment in excess of sanction

As per sanction of DST (May 2006), Government share in TCGA project was ₹13 crore for equipment. Out of this amount, DST, CSIR and IGIB were to share ₹8.25 crore, ₹2.72 crore and ₹2.03 crore respectively. DST released ₹8.10 crore against its share of ₹8.25 crore while CSIR and IGIB released their full share of ₹2.72 crore and ₹2.03 crore respectively. Against the available funds of ₹12.85 crore, IGIB installed equipment worth ₹12.44 lakh at TCGA.

In addition to the above, IGIB installed equipment worth ₹2.68 crore procured for its other projects, for commercial use of TCGA. Another set of equipment worth ₹1.16 crore were also placed at the disposal of TCGA for training purposes. Thus, against the sanctioned cost of ₹13 crore for procurement of equipment, IGIB placed equipment worth ₹16.28 crore at TCGA.

CSIR stated in April 2010 that the excess equipment installed at TCGA were in terms of the agreement. The reply of CSIR did not address the issue of additional expenditure of ₹3.28 crore incurred on the equipment.

4.1.6.6 Irregular booking of expenditure not related to TCGA activities

(a) To promote its own business activities, IMM allocated (October 2008) a built-up space of 500 sq.ft at third floor of the Okhla premises (same premises as discussed in para 4.1.6.3) to its Genomic Discovery Project Group and charged the expenditure amounting to ₹15.76 lakh[63] relating to rent and electricity for the period October 2008 to August 2011 to TCGA.

(b) During 2006-07, manpower and chemicals of TCGA worth ₹41.52 lakh were utilised by IMM for its own projects, but TCGA did not recover the same from IMM.

TCGA, while accepting (March 2011) the above audit observations, assured that the expenditure not related to TCGA activities would be reversed, but as of March 2012, no action was taken.

Thus, an expenditure of ₹57.28 lakh was irregularly spent by IMM from TCGA funds.

4.1.6.7 Undercharging of service charges

IMM undertook a project titled Cholera-Typhoid Vaccine Research (CTVR) in 2005-06 in collaboration with Research Triangle Institute, USA (RTI) and carried out genotyping, sequencing and oligo nucleotide synthesis services under the project through TCGA.

The rates for genotyping service as fixed by the Monitoring Committee (MC) of TCGA for 2004-05 to 2008-09 was ₹35 to ₹50 per sample for IMM. However, IMM credited TCGA at ₹23 per sample for 21.97 lakh samples during the years 2006-07 and 2007-08, which resulted in loss of income of ₹88.36 lakh and ₹1.75 crore respectively to TCGA.

CSIR stated (April 2010) that the price realized from CTVR project was higher than the average price realised from all other customers. The reply is not acceptable as TCGA did not charge IMM according to the rates fixed by its MC. Further the average price realised from other customers included IGIB and CSIR institutions, which were being charged at cost price and reduced rates respectively.

4.1.6.8 Uneconomic pricing of services resulting in loss of revenue

During the period 2006-12, TCGA rendered 58 services under six major categories[64]. Audit observed that in two out of the six categories of services, costing was not done economically. The actual cost of chemicals and consumables used in the services were higher than the charges fixed for the services. The uneconomic pricing resulted in loss of revenue, as discussed below:

[63] ₹14.16 lakh as rent and ₹1.60 lakh as electricity charges
[64] Oligo synthesis, Proteomics, Genotyping, Micro array, Sequencing and Custom services

(a) Affymetrix genotyping services: As per the sales registers, TCGA rendered affymetrix genotyping services for testing 130 samples during 2006-09 and earned revenue of ₹34.01 lakh (No such service was provided during 2004-06). However, it was seen from the consumption vouchers that the expenditure incurred on account of the chemicals and consumables used in these services during the two years (2007-08 and 2008-09) was ₹34.34 lakh.

Further, scrutiny of the sales register for the years 2009-11 revealed that no affymetrix services were provided by TCGA during these years, however, the consumption register of chemicals and consumables disclosed ₹3.71 lakh as expenditure incurred on affymetrix services.

(b) Microarray services: TCGA provided microarray services of 17 types at a price ranging widely from ₹280 to ₹29,400. Costing was done for the said service in 2006-07 considering total direct cost[65] as 50 *per cent* of total sale. Audit however observed from the sales registers of TCGA for 2006-09 that microarray services provided for testing of 484 samples earned revenue of ₹40.90 lakh whereas direct expenditure on chemicals and consumables was ₹34.24 lakh.

Thus, direct expenditure was actually 84 *per cent* against estimated direct cost of 50 *per cent*, making the service unviable.

CSIR did not offer any comments on audit observation on costing of affymetrix genotyping services. Regarding microarray services, it stated that the price of the services was fixed at a lower rate to make it competitive with other cost-effective technologies to promote the technology. The reply of CSIR was not convincing as it overlooks the fact that the services even at competitive rates need to be sustainable in terms of pricing.

4.1.6.9 Benefits derived from the use of IGIB equipment

In terms of guidelines[66] of CSIR, for allowing use of any CSIR equipment/ facility to any private party, each institute should enter into an agreement with the private party after obtaining approval of the Director General, CSIR. The user charges should be worked out and maximum percentage of the same obtained as advance on or before signing the agreement.

(a) IGIB procured a bench-top system for genetic analysis applications (Illumina) in September 2006 at cost of ₹2.48 crore. Audit observed that TCGA used the Illumina equipment for 39 days during 2008-09 without

[65] including chemicals and consumables, manpower and cost of equipment

[66] Office Memorandum (March 2002) regarding scheme for permitting use of CSIR equipment/ facilities/ Lab space and manpower by industry.

making any payment towards usage charge. When this was pointed out by Audit, the Monitoring Committee of IGIB fixed (February 2010) the rate of ₹0.53 lakh per day for utilising the equipment and amount of ₹20.67 lakh was paid to IGIB in two installments by TCGA.

(b) IGIB procured a High Performance Bio-computing Facility (Super computer) in September 2005 at a cost of ₹10.71 crore. It was installed in December 2005 at TCGA's premises at Okhla (as discussed in para 4.1.6.4).

Audit scrutiny revealed that out of the total 228-node cluster available in the super computer, IGIB issued authorisation for 61 ID numbers. One ID was also issued to TCGA, which could be logged in by many users. However, while issuing the said ID to TCGA, IGIB did not realise any user charges.

CSIR stated (April 2010) that TCGA did not carry out any commercial activity by using ID number for super computer. The reply of CSIR is not acceptable as allowing utilisation of supercomputing facility to TCGA without any user charges was in violation of CSIR's guidelines.

4.1.7 Poor business practices leading to bad debts

₹52.88 lakh were written off from TCGA accounts during 2006-07, 2009-10 and 2010-11. This write-off was carried out without the approval of Advisory Committee/Monitoring Group of TCGA. Analysis of reasons for these write off revealed that these services were provided without obtaining purchase orders or due to supply of incomplete data/results to the client, non-availability of relevant records with TCGA, etc.

For instance, TCGA provided services for a project of the Defence Institute of Physiology and Allied Sciences (DIPAS), New Delhi received from National Facility for Biochemicals and Genomic Resources (NFBGR)[67] during 2010-11. Work on the project was completed in March 2011 at a total charge of ₹37.85 lakh and the result data was delivered. However, it was observed that no purchase order was available for the work undertaken and the value had not been realised by TCGA till March 2012.

4.1.8 Lack of adequate monitoring

Monitoring of activities during operation and execution is necessary for successful implementation of any project. In terms of agreement, an Advisory Council (AC) consisting of a committee of seven members headed by Director, IGIB or an eminent scientist was to be constituted for TCGA to guide its mission and future vision, goals, targets, direction, etc. IMM was to

[67] a resource center for biological and genomic resources under IGIB

run and operate TCGA as per the policy framework and guidelines laid down by the AC. AC was to be assisted by a Monitoring Group (MG) consisting of scientific, technical and commercial advisors and chaired by CEO, TCGA. MG was to review all operational issues of TCGA. Audit observed that:

- No frequency was fixed for holding of meetings of AC and MG. The meeting of AC was held only once in January 2006 during 2004-11. In January 2007, IMM approached IGIB for holding further meeting, but the same was not held. The reasons for not holding the meeting were not on record. The meeting of MG was held only once during 2004-11.
- In July 2007, MG constituted a Project Monitoring Committee (PMC) with members drawn from diverse expertise and knowledgebase for providing scientific inputs and directions, but said committee did not meet even once during July 2007 to March 2009.
- During 2009-11, five meetings of PMC were held. The action taken report in respect of the decisions taken in the previous meetings were not prepared and placed before the successive meetings. In the absence of action taken reports of earlier decisions, holding of subsequent PMC meetings was ineffective.
- No guidelines were issued by AC to IMM for operating TCGA. Further, no physical or financial targets were fixed by AC for TCGA.
- AC/MG failed to monitor decisions taken for operation of TCGA, which adversely affected its financial position, such as appointment of TCGD as project manager for the TCGA building (para 4.1.6.2), irregular renewal of rent agreement (para 4.1.6.3), uneconomic pricing of services of TCGA (para 4.1.6.8), etc.

Thus, the monitoring and evaluation of TCGA was inadequate.

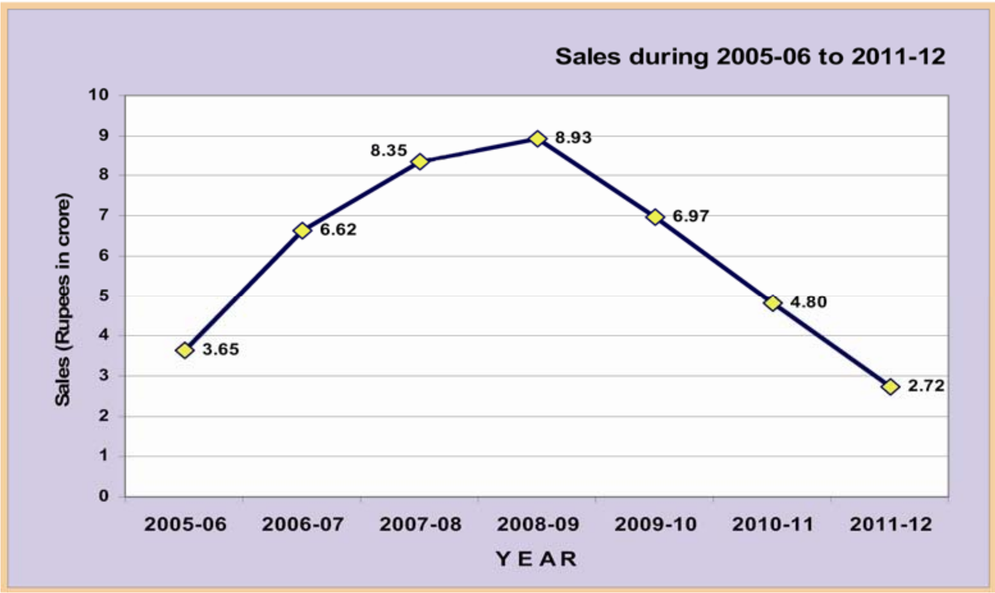
Accepting the audit observation, CSIR stated (April 2010) that MG of TCGA had been expanded to include financial experts of IMM as well as CSIR/IGIB. It further stated that the first meeting of the MG was held in February 2010 and competent authority was being approached to recreate the AC under chairmanship of Director, IGIB.

4.1.9 Failure of TCGA as a leading national facility

As stated in para 4.1.1, the TCGA was created with the objective of enabling large number of small laboratories to take advantage of its innovative facilities, making new discoveries in the post-genomic sequencing era and operating it as a national facility and as a shared resource for use by universities, industry and laboratory groups. Audit observed that TCGA failed to achieve the said objective. The detailed audit observations in this regard are as under:-

4.1.9.1 TCGA reassessed the biotechnological products/ services market in 2005-06 at ₹100 crore and estimated TCGA's share to be 25 *per cent* i.e ₹25 crore. However, TCGA could provide services ranging from ₹3.65 crore to ₹8.93 crore only during 2005-06 to 2011-12 (i.e. upto February 2012) as compared to the estimated target of ₹25 crore per year.

Chart 6- Market share of TCGA from 2005-06 to 2011-12



The average market share of TCGA was only six *per cent* as against the envisaged 25 *per cent* during the period of review. Further, there was continuously decreasing trend in the sale/services from ₹8.93 crore in 2008-09 to ₹4.80 crore in 2010-11, which further reduced to ₹2.72 crore during 2011-12.

4.1.9.2 In terms of the number of samples analysed, it was observed that the share of users other than IGIB/CSIR institutions and IMM was significantly low at 2.85 *per cent* during 2004-09, which further decreased to 1.64 *per cent* during 2010-11. During 2009-11, IGIB's share alone was 92.39 *per cent* of the total samples analysed.

Thus, the major portion of services of TCGA was confined to IGIB only and the objective to develop and operate the facility as national facility with large number of laboratories using the facilities remained largely unachieved.

CSIR admitted (April 2010) that profitability of TCGA could have increased if it was used as a national resource.

4.1.10 Conclusion

IGIB did not undertake due diligence in the process of selecting the partner for engaging in the public-private partnership for setting up TCGA. It selected the partner without waiting for the assessment report of the consultant hired by it to conduct industry analysis of laboratory products and services in the area of genomics and proteomics. The agreement drawn up with Institute of Molecular Medicine (IMM), the private partner favoured the latter and did not have adequate provisions for safeguarding interests of the Government.

IGIB extended benefits to the private partner by allotting government space to IMM without obtaining CSIR's approval and failing to realise user charges from the private partner for use of equipment belonging to IGIB.

Although equipment costing ₹16.28 crore were installed, TCGA could not achieve self-sufficiency, as envisaged. Its average market share remained at 6 *per cent* as against the projected 25 *per cent* of market share, with limited clientele mainly comprising of CSIR, IGIB and IMM and not many private players as envisioned. The pricing policy for its services was uneconomical and services to IMM were given below the prescribed rates. Poor business practices and extending undue benefits to the private partner by booking expenditure not relating to TCGA activities in its accounts also impacted the financial position of TCGA.

The construction of building for TCGA was delayed by more than six years. As a result TCGA incurred expenditure on payment of rent for hired accommodation. In addition, TCGA incurred avoidable expenditure due to payment of excess project management fee, injudicious revision of lease agreement and irregular booking of expenditure on building by IMM.

The monitoring mechanism established for TCGA was lax. No periodicity of meetings of the Advisory Council and Monitoring Group was prescribed. As a result, both the committees met only once during the entire duration of operation of TCGA (2004-11). Advisory Council, which was to lay the policy framework and guidelines for operation of TCGA by the private partner, did not issue the same.

Thus, due to poor planning, imprudent project management and failure to safeguard the interest of government, the objective of TCGA in becoming a national research facility as a shared resource for use by universities, industries and laboratory groups remained largely unachieved.

4.2 Unfruitful expenditure

Central Institute of Mining and Fuel Research, a constituent unit of Council of Scientific and Industrial Research, failed to utilise technology of energy efficient coke oven in development of a demonstration/commercial plant. As a result, expenditure of ₹2.14 crore incurred on the project was rendered unfruitful.

Metallurgical coke is the main input in blast furnace for production of steel. Conventionally, metallurgical coke is produced either from by-product coke oven or from the non-recovery type beehive ovens. While the by-product coke oven is highly capital intensive with a high operational maintenance and unsatisfactory annual return, the non-recovery type coke oven is a low cost and technologically simpler alternative, but part of coal also burns off in the process.

With a view to develop a new coke oven incorporating the advantages of both types of ovens, Government of India, Ministry of Coal sanctioned (August 2003) a project titled 'Development of cheap energy efficient by-product coke oven for the production of hard coke for steel/metallurgical use', at a cost of ₹2.87 crore to Central Mine Planning and Design Institute Limited[68] (CMPDIL) with Central Institute of Mining and Fuel Research, Dhanbad (CIMFR)[69] as implementing agency, with project duration of two years. The objective was to design and develop a semi by-product coke oven utilising potentials of beehive coke oven to make it cheap and energy efficient. The concept was subsequently to be utilised in development of a demonstration/commercial scale plant to be constructed at the premises of coal producing organisation.

The project was to be implemented in two phases. The first phase comprised of pilot scale studies followed by construction of demonstration/commercial scale plants at the premises of coal producing organisation in second phase.

Although the project was to be completed by October 2005, it was extended upto December 2008 due to delay in procurement of capital equipment. Expenditure of ₹2.14 crore was incurred on the project.

The project completion report submitted by CIMFR (May 2009) mentioned that the objectives of the project were fulfilled in general, although a more extensive work-out on the oven design was necessary for better performance of oven. It was also stated that the knowledge of present study would be

[68] A Schedule B-Company and fully owned subsidiary of Coal India Limited.
[69] Formerly known as Central Fuel Research Institute, a constituent unit of Council of Scientific and Industrial Research (CSIR).

utilised for construction of demonstration/commercial scale plant for coal/coke producing organisation.

However, actual application of the developed concept for efficient and cheap production of coke was not found on record.

The issue of usefulness of expenditure already incurred on project was first raised in audit during December 2009. CIMFR stated (December 2009) that operating the coke oven for prolonged period required minor modifications in the project which could be feasible after getting a fresh project. However, CIMFR took no follow up action to submit a fresh project proposal to the Government, nor undertook the activities under Phase II of the project. Audit further observed that CIMFR did not involve the user industry either at the time of initiation of the project or at any other stage during its implementation.

Upon further pursuit of the issue, CIMFR stated (May 2012) that it was not approached by any user industries for utilising the concept in the development of demonstration/commercial plant. CIMFR added (March 2013) that a workshop on coal carbonisation was conducted (March 2011) for the senior executives of Steel Authority of India Ltd. but no response was received as of March 2013.

CSIR stated (March 2013) that it was assumed that after completion of the project it would be warmly accepted by the coke producing industries, however no proposal was received from end users for setting up of such commercial plant.

Thus coke oven developed by CIMFR did not find use in the industry even after more than four years of its development, thereby rendering the expenditure of ₹2.14 crore incurred on the project unfruitful.