

## **GI-GIS: A Methodology of DSS for Potential Geographical Indication in India**

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### **Abstract**

Determination of potential Geographical Indication (GI) is a necessity for timely protection of intellectual property of geographical characteristics. The process of determination and its subsequent filling for registration of GI remains manual in most of the developing and least developed nations. The manual process hinders the faster protection mechanism of GIS in a way encourages biopiracy. The problem can be solved successfully if the process of determination is fully automated and subsequent filling process is semi-automated (as the nature of information at this stage is semi-structured and unstructured). The process of automation of determination of potential GIs require a GIS based decision support system backed up by a distributed database of potential GIs. This paper explores a DSS methodology in the form of a system chart which could be used for potential geographical indication (GI) determination in India.

GI is a name or sign used on certain products that have a specific geographical origin and possess qualities, reputation or characteristics that are essentially attributable to that place of origin. More than 5000 cases/items are considered having potential for acquiring geographical indications, other than 223 already registered ones. The paper evolves round a DSS mechanism implemented through a Geographical Information System. The geographical region under consideration is India. However, with the change of database and rule base of DSS, the system can be employed for any country/region. The system design would get its virtual run through a web portal where the end user/consumer/applicant may get fill the requisite details as demanded in GI application form. The system will accordingly classify it into one of the 34 classes as prescribed in GI Act, 1999[1]. The norms for checking the potential are based on the provisions of being a GI such as GI must satisfy the condition of newness as claimed by the association or

authority of manufactures /growers of the product having strong geographical flavour of the place where it has been originated /manufactured. Prior registration of GI puts to an end to uniqueness. The sign/word indicating GI must not work against public morality of the Nation. The criteria are checked for declaring a potential GI in GIS. The GIS also generates the skeleton application to be submitted after due manual scrutiny/modification/editing/addition. The web portal provides a number of services for GI and a user can check potential of getting a GI before entering into time, money and effort consuming process of GI application. The database for such purpose is updated periodically from the application database of GI from IPAB or GI application data base of IP India, Chennai.. The legal validity of GI will be checked by an expert system that works in conjunction with the knowledge base obtained from the registered database as well as periodical updating of application data base. A system chart diagram represents the total methodology of the project. A test case dry run for a potential GI has been worked out in this paper to show the viability of the methodology for a potential GI candidate, namely “Komal Chaul”. The designed DSS methodology will provide a cost effective way for GI registration through GIS web portal.

## **Introduction**

Data mining is the extraction of implicit information from a large explicit data set. The basic idea is to obtain decision support that is not readily available. Data mining is the process of discovering interesting knowledge from large amount of data stored either in database, data marts/data warehouses or other data repositories [8]. The primary data mining tasks of Classification, Regressing and Clustering are usually implemented in any DSS by its various components. The other processes of Summarization, Dependency Modeling, Change and Deviation Detection are obtained through rigorous statistical feedback processes used for such purpose.

A decision-support system is an integrated set of computer tool that allows a decision maker to interact directly with information useful in making even semi-structured and unstructured decisions. The emerging database for storing information provides the backend support. The database of Geographical Information system further requires larger data set as a single piece of information may be obtained after collaborating several layers of specific information related to a particular geographic region. It contains both spatial and non-spatial database. Implementation of decision support system in GIS is a complex software system in multidisciplinary realm.

Geographical Indication is a type of Intellectual Property Rights (IPR) as recognized in TRIPS Agreement [5]. The term “IPR” refers to a number of distinct types of creations of the mind for which property rights are recognized having legal validity. There are seven types of IPR [2], like Patents ( Act passed in the Indian Parliament 10<sup>th</sup> March, 1999)[5], Copyright ( Act passed in the Indian Parliament 30<sup>th</sup> December, 1999)[5], Trade Marks ( Act passed in the Indian Parliament on 23<sup>rd</sup> December, 1999)[5], Geographical Indications ( Act passed in the Indian Parliament on



23<sup>rd</sup> December, 1999)[5], Industrial Design ( Act passed in the Indian Parliament on the year 1999)[5], Plant variety protection and farmer’s Right ( Act passed in the Indian Parliament on August, 2001)[5], Layout of Integrated Circuit Design ( Act passed in the Indian Parliament, 2000)[5].

“Geographical indications”, in relation to goods, means an indication which identifies such goods as agricultural goods , natural goods or manufactured goods as originating, or manufactured in the territory, where a given quality, reputation or other characteristics of such goods is essentially attributable to its geographical origin and in case where such goods are manufactured goods one of the activities of either the production or of processing or preparation of the goods concerned takes place in such territory , region or locality, as the case may be.[3]

More than 5000 geographical objects are considered having potential for acquiring GI, other than 223 (till 23<sup>rd</sup> September 2010) already registered ones [7]. For registering goods as a GI one has to follow the process

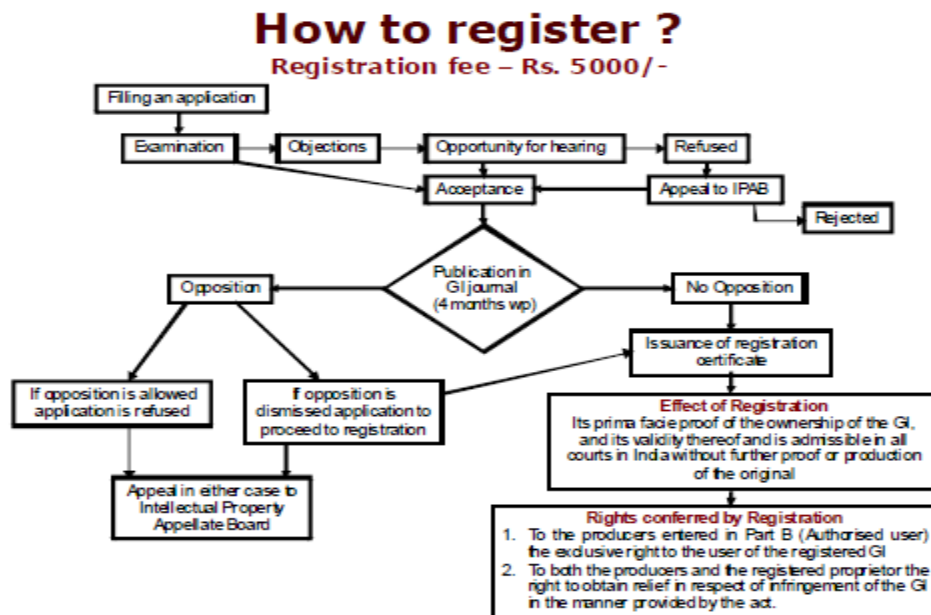


Figure 1: Registration details for new applicant

Source: Institute of intellectual property studies [2]

The process of filing an application with the registry, getting it examined, followed by office actions for its acceptance or refusal is a time and money consuming process. Introduction of an expert system together with GIS is the real need of the day. The aim of this DSS methodology is

to provide a timely cost effective way for GI registration. The process will forbid the attempted registrations and reduce the cost of protection and enforcement for the industry and the government. A case study of DARJEELING tea has shown such successful attempted registration in the countries like Canada, Egypt, international registration of Germany, Austria, Spain, France, Portugal, Italy, Switzerland and former Yugoslavia, Beneleux registration of Belgium, Netherlands, Luxembourg, Japan, UK, USA, Russia etc increasing the cost of protection manifold.[2].

### **DSS Methodology of GI**

The designed DSS methodology would get its virtual run through a GIS web portal. The end user /consumer/applicant has to fill the requisite details [4] like

- Applicant name
- GI name
- Class of goods
- Particulars of appearance
- How the indications serves to designate the goods as a GI
- The territory
- Certified copies of the map of the territory
- An affidavit of how the applicant claim to represent the interest
- The standard bench mark or other characteristics of the GI
- The particulars of special characteristics
- Textual description of the proposed boundary
- The growth attributes in relation to the GI pertinent to the application
- Special human skills involved, if any
- Number of producers
- Particulars of inspection structures, if any to regulate the use of GI.

Once the applicant fills out the details the system will access data from two databases

- 1) GI registered data. In India presently 223 GI has been registered (till 23<sup>rd</sup> September 2010) [7]. In GI registered data all the GI that has been registered in India are stored up to a certain specified date
- 2) GI criterion data contain the criterion that needs to be fulfilled for having GI are stored. In case there are some prohibitions which apply for not being a GI the rule base of prohibitions are displayed with highlight on appropriate prohibitions. The rule base may contain rules like[6]

- The use of which would be likely to deceive or cause confusion
- The use of which would be contrary to any law for the time being in force
- Which comprises or contains scandalous or obscene matter
- Which comprise or contains any matter likely to hurt the religious susceptibilities of any class or section of the citizens of India
- Which would otherwise be disentitled to protection in a court
- Which are determined to be generic names or indications of goods and are , therefore not or ceased to be protected in their country of origin , or which have fallen into disuse in that country
- Which would literally true as to the territory, region or locality in which the goods originate but falsely represent to the persons that the goods originate in other territory, region or locality case may be.

### **Implementation of DSS for GI**

The decision support system (DSS) implemented comprises 1) System Module 2) Working databases and 3) System databases.

1) System Modules : The system module consist of

- Decision control Module: This module takes the decision whether the information supplied by the new applicant is sufficient for determination of GI or not.
- Report Generation Module: It responds to the applicant/user whether the applicant details are accepted or not by getting validated data from the decision control module.
- System Maintenance Module: Here the system collects the details of new applicant details in a new database and the corresponding GI name also gets enlisted in the GI Potential database and the corresponding details are sent to IPIndia Database for verification.

2) Working Database : The working database comprises of

- Applicant's database: This database comprises of all the details of the new applicants.
- Acceptation /Rejection database: This database comprises of the accepted and rejected applications details of all GIS up to a specified data updated periodically.



- Potential GI applicant's database: This database comprises of the accepted applications of potential GI database that are already validated and ready for application of registration.

3) System database : This module consists of

- GI Registrations database: It consists of all the names of registered GI in India.
- GI Rules & Regulations database: The rules and regulations details provided by IP India are stored for usage in decision control and support.
- GI Class/type of goods: All the details of 34 class/type of goods are stored
- Registered GI locations in India database: location details of registered GI in geographical and textual representations are stored.

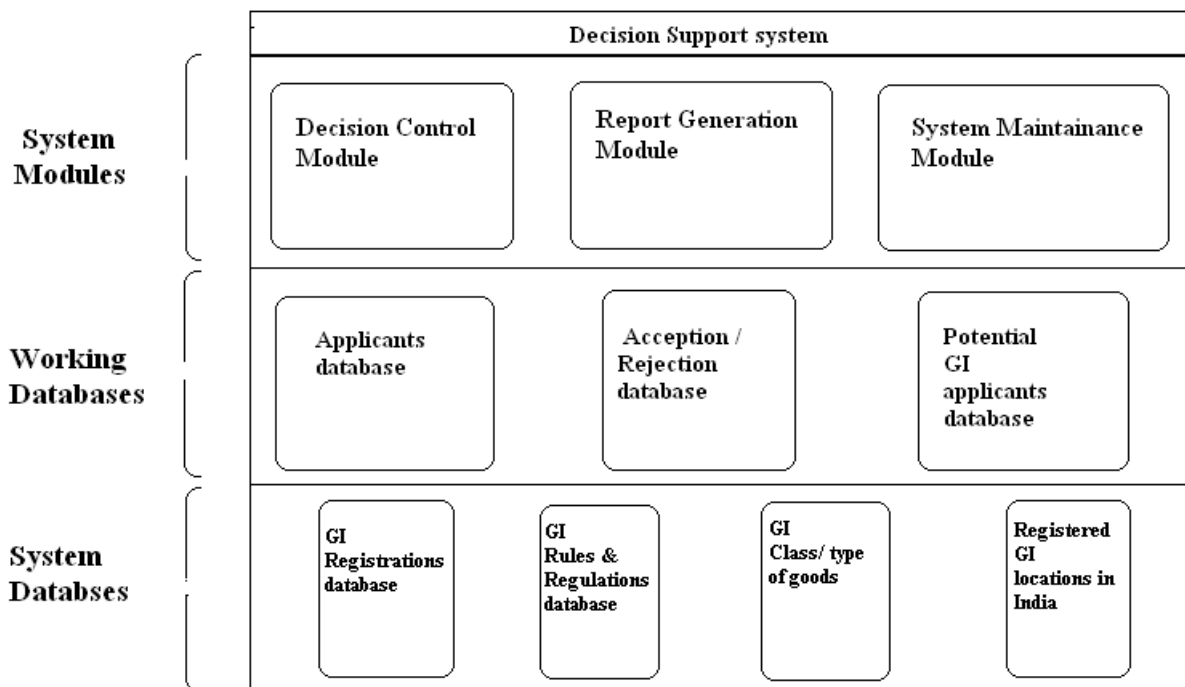


Figure 2: A Schematic diagram of the DSS.

The designed DSS comprises of an expert system where applicant details is received through user interface, once the applicant fills up the details. The system performs the tasks assigned as per the following steps:

- It checks availability of the applicant GI with the database of registered GI in India along with the location and the type of goods/classes the applicant is GI belongs.
- If the applicants named GI are already registered then the system will reject the form and a message will be provided to the applicant regarding the actual cause of rejection.
- Otherwise, the applicant will be forwarded to fill the detail performa and the system will further check if the newly entered GI follows the rules and regulations. Otherwise, the system will again display the rejection stating the violation of the rule.
- Finally, if the GI is really new and also follow all the rules and regulation of Geographical Indication, the system will accept it and the details being provided by the applicant will be stored in a new database.
- The new database of the potential GI will be sent to IPIndia for further processing and for quick examination of GI application for GI registration.

The designed system architecture for the applicant being potential to GI is as follows:

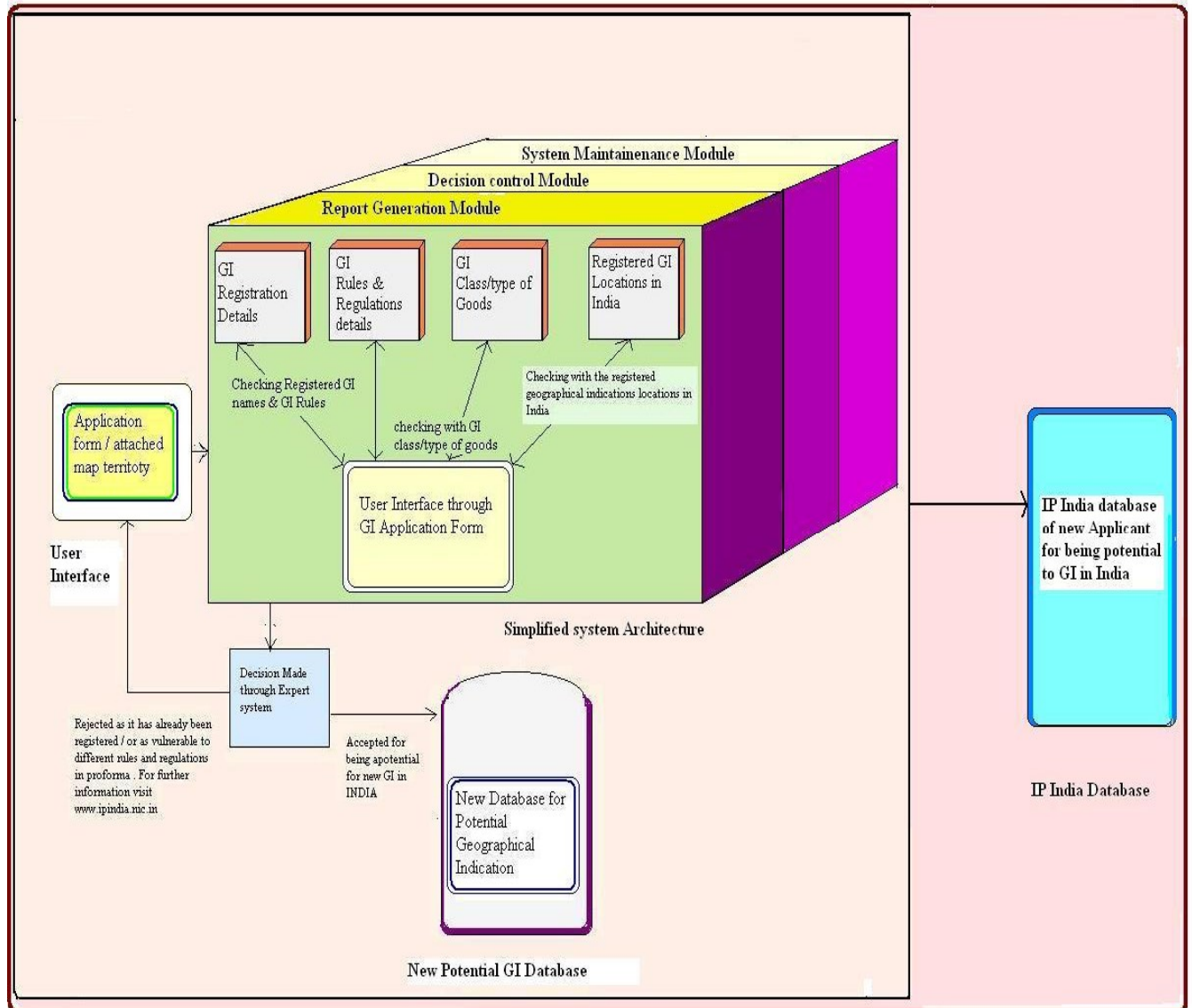


Figure 3: System Architecture of DSS for the applicant being potential to GI in India

The designed Web portal for user interface provides all the requirement details needed for registering for both online and as an offline applicants as per the rules of IP India.

**System requirements:**

The test case design makes use of the following hardware and software

- a) Hardware: Above 2.36 GHz processor, RAM above 256 MB,





b) Softwares: JDK 1.6, Netbeans 6.5 /Dreamweaver CS5, MS Access 2007

### Experimental Design Display

a) The User interface through web portal for filling up the application form is depicted in figure4. The applicants have to fill all the details as required in the form through specially designed.

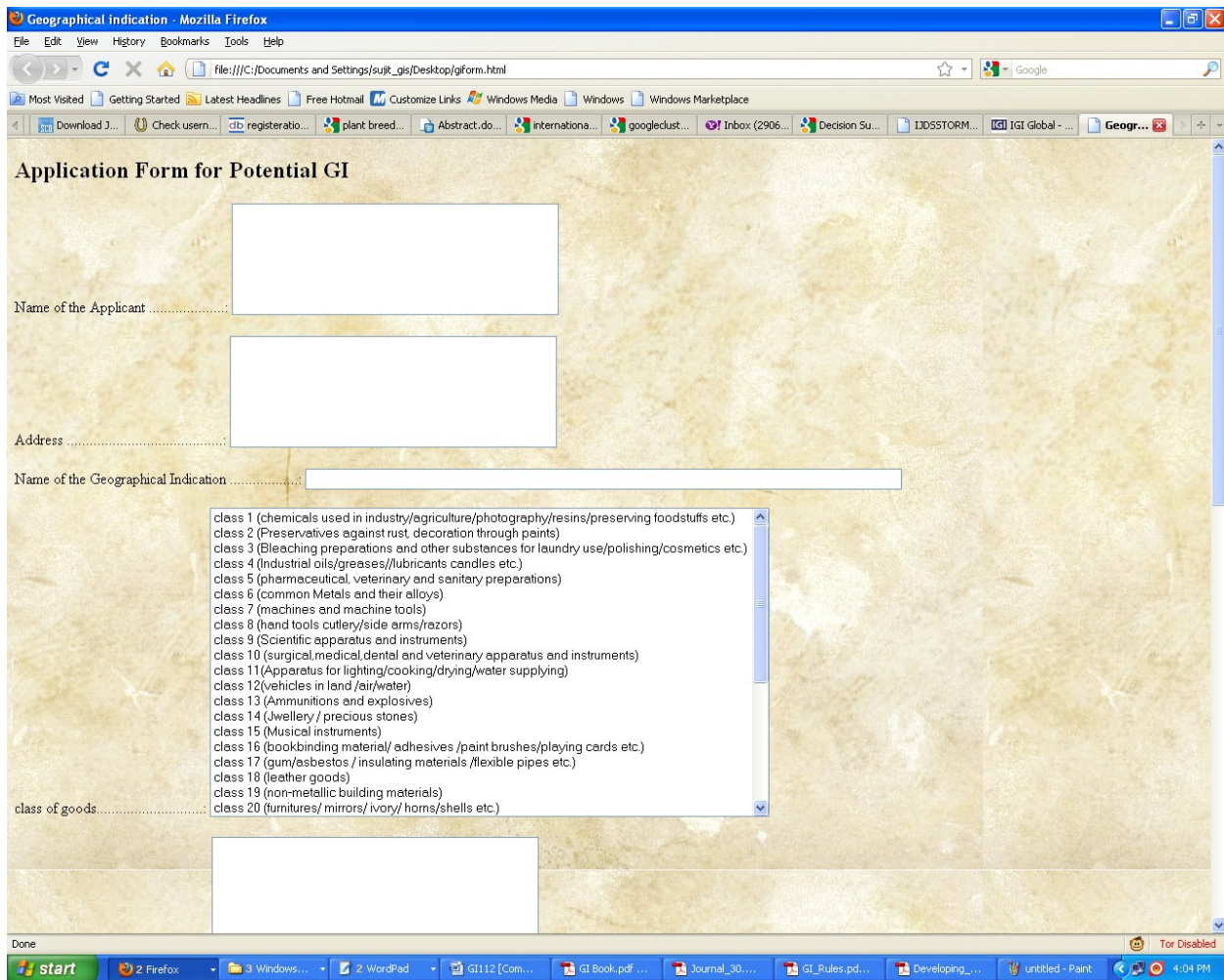


Figure 4: User Interface of Application form for potential GI

For validation and decision making the database like GI Registration database, GI class/type of goods database, Different GI Rules and regulation database, Registered GI locations in India



database are available in the system. The snapshot of GI Registration database has been provided in figure 5.

Security Warning: Certain content in the database has been disabled. Options...

ID	Geographical_Indications_name	class	goods	Add New Field
3	Darjeeling Tea (word)	30	Agricultural	
4	Darjeeling Tea (Logo)	30	Agricultural	
5	Aranmula Kannadi	20	Handicraft	
7	Pochampalli Ikat	24, 25, 27	Textile	
8	Salem Fabric	24	Textile	
9	Payyannur Pavithra Ring	14	Handicraft	
10	Chanderi Fabric	24	Textile	
11	Solapur Chaddar	24	Textile	
12	Solapur Terry Towel	24	Textile	
13	Kotpad Handloom fabric	24	Textile	
14	Mysore Silk	24, 25 & 26	Textile	
15	Kota Doria	24 & 25	Textile	
16	Mysore Agarbathi	3	Manufactured	
17	Basmati Rice	30	Agricultural	
18	Kancheepuram Silk	24 & 25	Textile	

Record: 14 of 18 | No Filter | Search

Figure 5: Snapshot of GI Registration database used in the DSS

Provided the details being filled up by the applicant, the system provide will check the details of geographical indications and the class/type of goods and accordingly, it will provide decision for accept/reject of the GI entered by the applicant.

### **System Testing:**

For testing the system implementation, two sets of example have been taken,



- 1) “Chandheri Saree”: The applicant’s Geographical indication has already been registered in GI Registered database in IP India and
- 2) “Komal Chaul”: The new potential GI for being Geographical indications in India.

**Case I:** On providing the details of “Chandheri Saree” the system clearly rejects the application as it has already been registered. Its presence in the IP India registered GI database makes it invalid for further registration. The system looks for the details, class/type of goods and the rules& regulations database to show examination based result. The snapshot of the decision is shown in figure 6.

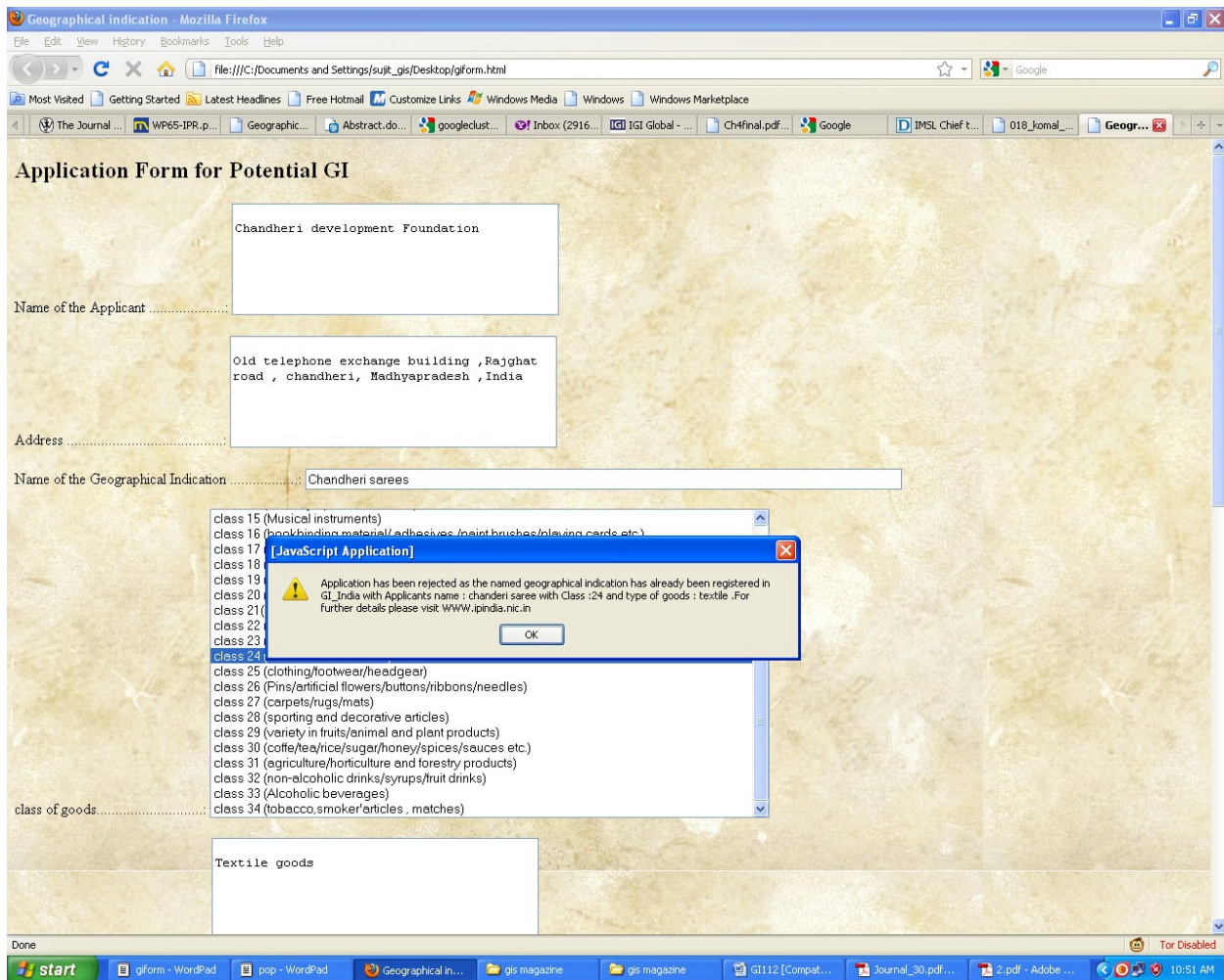


Figure 6: Snapshot of the system portal showing of the decision of rejection of the applicant



**Case II:** On providing the details of the applicant (“Komal Chaul “, Class 30 and agriculture (rice) as the type of goods from CRRI ), the system checks of the details of the GI candidate with the system database and shows off the result. “Komal Chaul “ being new as an potential GI the system accepts the applications details and stores it in the new potential GI registration database before forwarding it to the IP India database. The snapshot of the details is shown in figure 7.

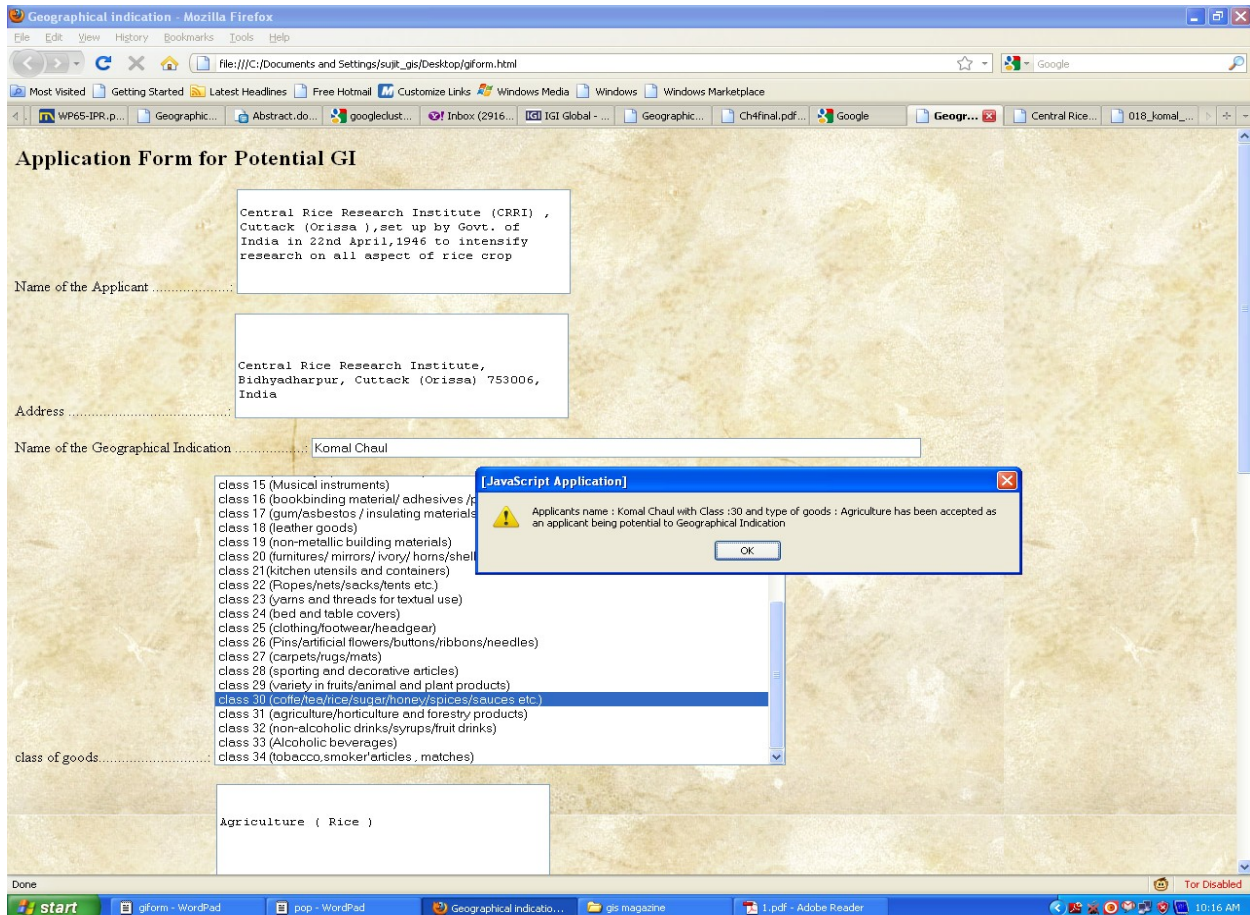


Figure7: Snapshot of the system portal showing of the decision of acceptance of the applicant.

The same system can be used for examination of application of GI that will be less time consuming than the present manual process.

**Conclusion and Future direction of Research:**

The system being implemented will either accept or reject based upon the details being provided in the various databases used for such purpose. The system could further be improved by making it a global GI database oriented system. Such extension of the system will surely be able to put an end to biopiracy and will improve the protection mechanism of intellectual property by avoiding erroneous grant of GI registration. The location can easily be traced in a GIS and is able to distinguish the different Geographical Indications being registered in different regions for similar resources of geographical origin. License Software's like ERDAS Apollo, ERDAS Imagine etc. and other open source GIS Software and GIS databases like Postgresql, MapWindow, GRASS GIS, and PostGIS etc. could be used for the purpose of implementation of such scalable GIS.

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