No.

Report of the Ex-Post Evaluation for the Agricultural Machinery Test and Evaluation Project in Mexico

March, 2007

Japan International Cooperation Agency

IC Net Limited

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06-02

A machine donated by JICA to detect the horsepower of PTOs, one of agricultural machines tested and evaluated at CENEMA

CENEMA staff examine ROPS

A CENEMA investigator explains university students the agricultural machinery testing system at CENEMA

Acronyms and Foreign Words

Acronym	Spanish	English or description
	Alianza Contigo	A plan central to the national agricultural development policy in Mexico launched in 1996. It entails 26 programs including one to support agricultural mechanization by way of provision of subsidy for certified agricultural machinery.
CENAPEMEA	Centro Nacional de Prueba y Evaluación de Maquinaria y Equipo Agrícola	National Center for Agricultural Machinery and Equipment Testing and Evaluation
CENEMA	Centro Nacional de Estandarización de Maquinaria Agrícola	National Center for Agricultural Machinery Standardization
COTENMAEA	Comité Técnico Nacional de Normalización de Maquinaria, Accesorios y Equipo Agrícola	National Technical Committee for Machinery, Accessory and Agricultural Equipment Standardization
EMA	Entidad Mexicana de Acreditación	Mexican Entity of Accreditation
INIFAP	Instituto Nacional de Investigaciones Forestales, Agricolas y Pecuarias	National Institute for Forestry, Agriculture and Livestock Research
ISO (English)		International Organization for Standardization
NMX	Norma Mexicana	Mexican Standard
NOM	Norma Oficial Mexicana	Official Mexican Standard
OCIMA	Organismo de Certificación de Implementos y Maquinaria Agrícola	Organization for Implements and Agricultural Machinery Certification
PCM (English)		Project Cycle Management
PDM (English)		Project Design Matrix
PTO (English)		Power Take-Off
ROPS (English)		Roll-Over Protection System
SAGAR	Secretariía de Agricultura, Ganadería y Desarrollo Rural	Secretariat of Agriculture, Livestock and Rural Development
SAGARPA	Secretariía de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación	Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food
UNAM	Universidad Nacional Autónoma de México	National Autonomous University of Mexico

Evaluation Summary

Evaluation conducted by: JICA Mexico Office

1. Outline of the Project		
Country : United Mexican States		Project title : Agricultural Machinery Test and Evaluation Project in Mexico
Issue/Sector : Agriculture		Cooperation scheme : Technical Cooperation Project
Division in charge : Agricultural Development Cooperation Dept. Agricultural Technical Cooperation Division		Total cost : approx. 793 million yen
Period of Cooperation	R/D:	Partner Country's Implementing Organization : National Institute for Forestry, Agriculture and Livestock Research (INIFAP) Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA)
	March, 1 1999 –February 29, 2004	Supporting Organization in Japan : Ministry of Agriculture, Forestry and Fisheries Bio-oriented Technology Research Advancement Center
Related Cooperation	N.A.	

1-1. Background of the Project

The modernization of farm management and improved social and economic welfare in rural areas through the mechanization of small- and medium-scale farmers and improved productivity are important issues in the Mexican agricultural policy. However, progress in agricultural mechanization has been slow due to, among other factors, the lack of a system of testing and evaluation of the quality and performance of agricultural machinery. Therefore, the Mexican Government, via the Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA, formerly SAGAR), decided to introduce such a system, and requested Japanese government to provide technical assistance for establishment of testing methods and evaluation standards as well as training of technical personnel. Accepting this request, the Japanese Government sent study teams, and the cooperation project was implemented for 5 years from March 1999. The Project planned to equip facility and train personnel of the National Center for Standardization of Agricultural Machinery (CENEMA) located in the Valle de México experimental field of National Institute for Forestry, Agriculture and Livestock Research (INIFAP), the research institute of SAGARPA, prepare the testing-evaluation standards with CENEMA, enforce them as official standards, establish other testing laboratories in Mexico apart from CENEMA through its training course, operate the system of testing-evaluation and certification by newly-established laboratories and the National Center for Testing and Evaluation of Agricultural Machinery and Equipment (CENAPEMEA).

As follow-up cooperation after the end of the cooperation in February 2004, 3 Japanese experts were dispatched to Mexico and 4 Mexican counterparts were trained in Japan for technical improvement of tractor testing.

1-2. Project Overview

(1) Overall Goal

Agricultural machinery with appropriate performance and safety for small and medium farmers are developed and extended.

（2） **Project Purpose**

To strengthen evaluation test system through drafting of the methods and standards of evaluation tests as well as through the improvement of techniques and knowledge for the execution of evaluation test.

（3） **Outputs**

1) The types of machinery to be dealt with in the Project are selected on the results of preliminary surveys.
2) Techniques for evaluation tests are improved.
3) Evaluation standards are drafted.
4) Experts for evaluation tests are fostered.
5) Evaluation test system is strengthened.

（4） **Inputs** (including the input for the follow-up activities)

Japanese side :

Long-term Expert	10	Equipment	150 million yen
Short-term Expert	18	Local cost	90 million yen
Trainees received	18		

Mexican Side :

Counterpart 50 in total
Land and Facilities experimental field, office building, testing laboratory
Local Cost 3.3 million pesos

2. Evaluation Team

Members of Evaluation Team	Maya Asakura (Chief of Evaluation), Consultant at IC Net Limited, Latin America Office Keiko Kotani (Analysis and Evaluation), Junior Consultant at IC Net Limited, Latin America Office	
Period of Evaluation	**Day/ month/ Year - Day/ month/ Year** 4/10/2006 – 20/10/2006	**Type of Evaluation : Ex-post**

3. Results of Evaluation

3-1. Summary of Evaluation Results

(1) Impact

At the time of the final evaluation in September 2003, the Project Purpose was not considered to be fully achieved. It is now considered to be achieved in terms of the number of testing-evaluation standards established. It is difficult to measure to what extent the indicator regarding the number of training courses and participants has been accomplished as no target value was either suggested. However, the indicator cannot be considered to have been met for the following two reasons: first, no training for testing tractors was held, and, second, there have been no institution that operates as a testing laboratory as a result of the training given by CENEMA, despite the fact that the training was intended for the establishment of other testing laboratories in Mexico apart from CENEMA.

As to the Overall Goal, it is considered to be achieved partially. The achievement of the Overall Goal is verified by four indicators. Nevertheless, the achievement cannot be measured because target values for each of the indicators are not set. Moreover, these indicators disregard the point of view of “small and medium farmers” referred to in the Overall Goal. For rectifying this problem, one of the four indicators was modified at the time of ex-post evaluation. The number of agricultural machines tested and certified is increasing steadily but most of them are tractors and there are few machines tested in case of other types of machinery (number of tractors cetified: 22, other machinery cetified: 2). This is due to the following three factors; 1) SAGARPA made it mandatory that farmers should purchase certified machines if

he/she would like to buy a machine and use subsidies from Alianza Contigo, a national program to provide support in the agricultural sector. This is an incentive for agricultural machinery manufacturers to have their merchandise certified. Tractors represent 80-90% of all agricultural machinery purchased with subsidies provided by Alianza Contigo, and this means that it is more important for manufacturers to have tractors certified than other types of machinery, 2) machinery other than tractors requires more time and procedures to carry out evaluation tests, raising fees for both testing-evaluation and certification, and 3) small- and medium-scale manufacturers that specialize in implements are not technically capable of making quality products which are good enough to be certified. The distribution of certified agricultural machinery distributed to medium farmers seemed to be increasing but no evidence was found which indicated increasing distribution to small farmers.

(2) Sustainability

(1) Institutional and Organizational Sustainability

The "Sector Program for Agriculture, Livestock, Rural Development, Fisheries and Food 2001-2006" stresses the need for the use of agricultural machinery as a way to raise productivity. According to a SAGARPA official, the Secretariat will maintain the policy for promoting mechanization in agriculture. A new presidential administration will take office in December, 2006, in Mexico, but this will not affect the above-mentioned policy as the ruling party remains in power. Therefore, it is expected that the subsidy program will also continue under Alianza Contigo. Furthermore, SAGARPA plans to introduce assistance for machine renewal and a loan scheme for purchasing machines. Alianza Contigo is a crucial program for the promotion of agricultural mechanization and NMXs.

The CENEMA, the testing-evaluation center, has both the equipment necessary to perform testing-evaluation of agricultural machinery and staff with the knowledge, skills and experience. By the end of the ex-post evaluation, it was ready to perform the testing-evaluation for all agricultural machinery, with the exception of tractor traction. Initially, this project envisioned that testing-evaluation responsibilities would be divided among multiple institutions under the CENAPEMEA. The ex-post evaluation revealed that only CENEMA performs the testing-evaluation. There are other institutions that are interested in becoming testing laboratories. However, currently they are not functioning due to the lack of demand and infrastructure.

The CENAPEMEA never fulfilled its role as a certification organization as originally planned. However, in 2003 SAGARPA secured the budget to create a body to replace CENAPEMEA. As a result, OCIMA was established in June 2005, and began certifying agricultural machinery, except tractor traction, in September 2005.

CENEMA currently retains four core staff members, including the director and three experienced investigators. Three investigators joined the center, two in 2003 and one in 2006. Each of the new investigators is responsible for testing tractor PTO, tractor hydraulic lift and tractor ROPS, respectively. INFAP underwent institutional restructuring in 2005 and, as a result, the officials who were involved in the project during the implementation were relocated to other departments. Some of them are no longer with INIFAP. At present, an official is in charge of follow-up on CENEMA. A SAGARPA official have continued to oversee CENEMA-related affairs since the cooperation period of the Project. Some SAGARPA counterparts have now retired, but the official who supervises CENEMA was a counterpart of the project, and the present director of the OCIMA used to be a counterpart in SAGARPA.

The majority of the machinery and equipment donated during the project continue to be in use and are well maintained. However, some of the tools brought from Japan are not used as staff members do not know what they are for and how to use them.

(2) Financial Sustainability

CENEMA has two sources of funding: INIFAP and self-generated income from testing services. On the other hand, OCIMA operates on a self-sustained basis; their income originates from audits and their 15% share of the testing fee. Both CENEMA and OCIMA

have seen gains since they began their respective operations, so far securing the necessary budget. Nevertheless, the willingness of manufacturers to have their products tested and certified depends to a high degree on the existence of Alianza Contigo. Therefore, it is safe to say that the ability of the two organizations to remain financially independent depends on the government policy. It is imperative that they develop additional fee-for-service activities to seek and secure a source of income that is not—or at least less—susceptible to the government policy.

(3) Technical Sustainability

The investigators can be said to possess an adequate level of technical skills and knowledge to render testing services. Japanese experts who were contacted for interviews commented that, although in some areas CENEMA still needs to polish their technique through practice, it will be able to fully function as a testing laboratory. For instance, CENEMA is now performing tests for Tractor PTO, for which technical assistance was provided last year. One of the experts stated that this was a significant advance. This illustrates their ability to not only learn but to grow. Most importantly, the expert mentioned that CENEMA staff is highly enthusiastic and hard-working. CENEMA investigators enhance their knowledge by attending workshops and maintaining overseas contacts.

Considering the nacional the policy for promoting mechanization in agriculture, the human resources, infrastructure, and budgetary development of CENEMA and OCIMA, we can conclude that the factors necessary for the consolidation of the agricultural machinery testing-evaluation and certification system have been satisfied. However, there are still several tasks to be carried out in order to develop and strengthen the system and secure the sustainability of the Project. These include Alianza Contigo and broader recognition of the importance and necessity of NMXs by manufacturers and consumers (farmers). Their importance and necessity have not been fully acknowledged in part because it has not been long since they were enacted.

3-2. Factors that have promoted project

(1) Impact

The biggest promoting factor should have been the subsidy from Alianza Contigo. SAGARPA made it mandatory that farmers should purchase certified machines if he/she would like to buy a machine and use subsidies from Alianza Contigo. And this is an incentive for agricultural machinery manufacturers to have their merchandise certified.

(2) Sustainability

The policy environment has continued to be favorable for agricultural mechanization and this has been the promoting factor the sustainability of the Project. SAGARPA plans to further expand its subsidy program for the purchase of agricultural machinery.

3-3. Factors that have inhibited project

(1) Impact

Farmers and manufacturers of agricultural machinery lack awareness and recognition of the existence as well as the importance of the testing-evaluation and certification system of agricultural machinery, due to the fact that no other measures for this diffusion were thought of besides the subsidy program under Alianza Contigo. This is considered as the principal inhibiting factor the Project.

(2) Sustainability

The standards of the testing-evaluation of agricultural machinery are voluntary standards, which means it is the discretion of manufacturers to decide whether of not to have their products tested and evaluated. At present, therefore, the testing-evaluation and certification system solely hinges on the subsidy program, which threatens

the sustainability of the project.

3-4. Conclusions

As a result of the Project, CENEMA has accomplished substantial institutional development as a testing-evaluation body for agricultural machinery. Combining this with the establishment of a certifying body called OCIMA, it can be said that the testing-evaluation and certification system in Mexico has been completed.

Nonetheless, the current environment is not conducive to the system's full operability. Manufacturers do not have an adequate understanding of the importance of the NMXs and farmers do not pay much attention to the NMXs when selecting agricultural equipment. For further development of the system and fulfillment of its real function, it is vital to educate farmers and manufacturers on the need and importance of testing-evaluation and certification, motivate manufacturers to have their products tested, evaluated and certified, and make farmers understand the benefits that accrue to them from the system.

3-5. Recommendations

(1) Testing-Evaluation and certification shall be regulated for agricultural machinery manufacturers. Considering that NMXs were created following the governmental policy to provide consumers with safe and appropriate agricultural machinery and Mexico has yet to develop a ground where NMXs are effectively utilized as voluntary standards, it is necessary that the government rather than a private sector directs the agricultural testing-evaluation and certification system.

(2) In order to make safe and appropriate agricultural machinery available to farmers, it is essential that testing always corresponds to the present agricultural condition. To this end, CENEMA shall collaborate with farmers and manufactures to collect and analyze information on malfunctions, accidents and their causes and, hence, promote the improvement and development of agricultural machinery.

(3) CENEMA and the experimental fields on INIFAP provides technical assistance to small and medium manufactures in improving their products, which will lead to an increase in the number of machines tested and certified.

(4) SAGARPA and CENEMA in collaboration with other related organizations shall fortify its effort of awareness raising for farmers regarding the importance and benefits of the testing-evaluation and certification system of agricultural machinery.

3-6. Lessons Learned

(1) In the Project Design Matrix (PDM) of this Project, good performance of National Center for Testing and Evaluation of Agricultural Machinery and Equipment (CENAPEMEA) appeared as pre-conditions and important assumptions, which were not eventually met because of a lack of funding to operate and the motivation of participating institutions. It is important to carefully examine pre-conditions and assumptions of PDM. If not, it could lead to a failure of the project.

(2) The Project Purpose involved two elements: first, building a system, and second, extending the system to involve farmers so that they appreciate and make use of the system when they purchase agricultural machinery. The Overall Goal also had two elements: developing agricultural machinery that is certified, safe and appropriate, and distributing it to farmers. Both include a key component of "diffusion to farmers." The evaluation, however, demonstrated that no other measures for this diffusion were thought of besides the subsidy program under Alianza Contigo. Strategies to promote the NMXs that were suitable for the state of the Mexican agricultural equipment market were essential. If a similar project is formulated in the future, an understanding of the factors affecting the projects and strategies that are feasible in the particular environment are essential to attain the project purpose.

(3) At the time of the ex-post evaluation, the achievement of some indicators for the Project Purpose and Overall Goal cannot be measured because target values for each of the indicators are not set. Target Values are set to make the goal of project clear and helpful for the effective

project management. Therefore, indicators with mesureable target values shall be specified in the future formulation of a project,

3-7. Follow-up Situation

At the end of the cooperation period, a follow-up cooperation was planned to provide technical assistance with regard to 4 parameters of tractor testing, providing that CENEMA would purchase equipment for the respective testing. Equipment of the testing of 3 out of 4 parameters were purchased and, therefore, 3 Japanese experts were dispatched to provide technical assistance (By October,2006).

事後評価調査結果要約表

評価実施部署：メキシコ事務所

１．案件の概要		
国名：メキシコ合衆国		案件名：メキシコ農業機械検査・評価事業計画
分野：農業一般		協力形態：プロジェクト方式技術協力（現：技術協力プロジェクト）
所轄部署： 農業開発協力部農業技術協力課（プロジェクト実施当時）		協力金額：約 7 億 9 千 3 百万円
協力期間	R/D: 1999 年 3 月 1 日～2004 年 2 月 29 日	先方関係機関：国立農牧林業研究所 農牧農村開発漁業食糧省
		日本側協力機関：農林水産省 生物系特定産業技術研究支援センター
他の関連協力：無し		

１-１　協力の背景と概要

中小規模農家の機械化を促進して生産性の向上を図りつつ、農業経営の近代化を推進し、農村の社会的・経済的地位を向上させることが、メキシコの農業政策における重要課題である。しかしながら、農業機械化は、農業機械の品質・性能に対する検査・評価体制が整っていないことが一因で進展が遅れていた。このためメキシコ政府は、農牧農村開発漁業食料省（SAGARPA[1]）を通じて農業機械の検査・評価体制を導入することを決め、日本政府に対して検査方法及び評価基準の策定、並びに技術者の養成のための技術協力を要請した。要請を受け、日本政府は数次にわたり調査団を派遣した後、1999 年 3 月から 5 年間にわたる協力プロジェクトが実施された。本プロジェクトは SAGARPA の研究機関である国立農牧林業研究所（INIFAP[2]）バジェ・デ・メヒコ試験場内の国立農業機械標準化センター（CENEMA[3]）の設備と人材を整備し、CENEMA が農業機械の評価基準の作成・施行と、新たな試験ラボラトリー設立を目的とした研修を行い、これら試験ラボラトリーが検査・評価試験を実施し、国立農業機械検査・評価センター（CENAPEMEA[4]）が農業機械の認証を行う計画だった。

2004 年 2 月の当該プロジェクト終了後のフォローアップ協力として、トラクター試験技術の向上を図るため、3 名の日本人専門家が派遣されると共に 4 名のメキシコ人カウンターパートが日本で研修を受けた。

１－２　協力内容

（1）上位目標

中小規模農家に対する、適正で安全な農業機械が開発され、普及する。

（2）プロジェクト目標

評価方法、評価基準案の策定及び評価試験実施の知識、試験技術の改善を通じて評価試験システムが強化される。

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[1] Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación

[2] Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias

[3] Centro Nacional para la Estandarización de Maquinaria Agrícola

[4] Centro Nacional de Pruebas y Evaluación de Maquinaria y Equipo Agrícola

（3）アウトプット（成果）

1）調査の結果からプロジェクトで扱う機種が選定される。
2）評価試験技術が改善する。
3）評価基準案が策定される。
4）評価試験技術者が養成される。
5）評価試験システムが強化される。

（4）投入（フォローアップ協力分も含む）

日本側：

長期専門家派遣	10 名	機材供与	1.5 億円
短期専門家派遣	18 名	ローカルコスト負担	0.9 億円
研修員受入	18 名		

総額 7.9 億円

相手国側：

カウンターパート配置 計 50 名
土地・施設提供 圃場、事務所、試験所
ローカルコスト負担 約 330 万ペソ

2． 評価調査団の概要

調査者	**（担当分野：氏名、所属先、職位）** 総括 ：朝倉麻耶 IC Net Limited ラテンアメリカ事務所 コンサルタント 評価分析：小谷慶子 IC Net Limited ラテンアメリカ事務所 ジュニア・コンサルタント
調査期間	**2006 年 10 月 4 日ー2006 年 10 月 20 日** **評価種類：事後評価**

3．評価結果の概要

3-1 評価結果の要約

（1）インパクト

2003 年 9 月の終了時評価の際は、プロジェクト目標が完全には達成されていないと判断された。事後評価調査では、農業機械検査・評価基準の数については 11 種類の基準が公式に施行されたことから達成されたと評価されたが、CENEMA が提供した研修コースの数については指標に具体的な数値が設定されていなかったため達成度を測ることが難しい。しかし、①トラクターの評価試験に関する研修が実施されなかったこと、②研修はメキシコ国内に CENEMA 以外の試験ラボラトリーを設立する目的で実施されたが、CENEMA 以外のラボラトリーは設立されていないことから、十分に達成されていないと考えられる。

上位目標については部分的に達成されたと判断される。ただし事後評価時に至るまで各指標の具体的な目標数値は設定されておらず、その達成度を正確に測ることはできない。またこれらの指標には、上位目標の「中小規模農家に対する」という視点が抜けているため、事後評価時に指標の 1 つを修正した。認証を受けた農業機械の数は着実に増加しているが、その大部分がトラクターであり、その他の農業機械で認証を受けたものは少数に留まる（認証を受けたトラクター：22 件、認証を受けたその他の農業機械：2 件）。これは、①農業機械メーカーが NMX の評価検査試験、認証を受ける動機は、政府の農家、特に中小農家を支援するためのプログラム「アリアンサ・コンティーゴ」の補助金を通じて農業機械を販売することにあるが、同補助金を使って購入される農業機械のうち 8~9 割はトラクターが占めるためトラクターの認証に対するメーカーのニーズはその他の農業機械の認証に対するニーズと比べて高いこと、②トラクター以外の農業機械は、検査認証費用がトラクターに比べて高いこと、そして③トラクター以外の農業機械を製造している多くの中小メーカーには、評価試験に合格し認証を受けられるような質の高い製品を製造する技術力がないことが理由である。認証を受けた農業

機械の中規模農家への普及は進んでいるようだが、小規模農家への普及増加を示す事実は見つからなかった。

事後評価時には上位目標以外のインパクトとして、①認証を受けたメーカーが販売促進を目的とした認証・検査制度の広報活動を実施していること、②評価試験では機械の品質・性能を正確に調査し、メーカーの提供する内容と調査結果に誤差がないか確認するため、農業機械の品質・性能に関する記載内容に関する信憑性が向上したことが確認された。

（2）自立発展性

① 制度・組織的自立発展性

SAGARPA の「農業、牧畜、農村開発、漁業及び食糧に関するセクタープログラム 201-2006 年」では、生産性向上の 1 つの手段として農業機械の利用振興を図る必要性がうたわれている。SAGARPA の C/P によると、同省は今後も農業分野における機械化推進政策を継続する方針であり、したがってその具体的支援プログラムであるアリアンサ・コンティーゴの農業機械の購入に対する補助金制度も継続される見込みが高い。SAGARPA にはこれに加えて農業機械の買い替え支援や購入時のローン制度を導入する計画もある。

評価検査実施機関 CENEMA は、評価試験に必要な設備と、知識・技術・経験のあるスタッフを配置し、事後評価実施時にはトラクターけん引以外の評価検査を実施できるようになっていた。本プロジェクトでは当初、CENAPEMEA に属する複数の機関が検査を行うことを計画していたが、事後評価時に評価検査業務を実施しているのは CENEMA のみだった。CENEMA のほかにも検査機関になることに関心を持つ機関はあるが、現時点では検査に対する需要の少なさや設備が整っていないことが理由で検査機関としては機能していない。

当初認証機関として機能することが期待されていた CENAPEMEA はついにその役割を果たさなかったが、SAGARPA が 2003 年に CENAPEMEA に代わる機関を設立するための予算を確保し、プロジェクト終了後の 2005 年 6 月に認証機関として農業機械認証機関（OCIMA[5]）が設立された。OCIMA は同年 9 月からトラクターのけん引機以外の農業機械について認証業務を開始している。

CENEMA の C/P の定着率は高いと言える。C/P のうち中核メンバー4 人は現在も CENEMA で勤務している。C/P の他、2003 年に 2 人、2006 年に 1 人トラクター担当のスタッフが加わった。INIFAP では 2005 年に組織改編が行われたため、C/P の大部分が異動、あるいは退職した。SAGARPA の C/P の中にも退職した者がいるが、CENEMA を管轄しているのはプロジェクトの C/P であり、また OCIMA の所長も SAGARPA の C/P である。

プロジェクトで供与された機材や器具の活用状況は概ね良く、維持管理状況も良い。ただし日本で調達された器具の中には、スタッフが使い方がわからず使用されていないものもあった。

② 財政的自立発展性

CENEMA の資金源には INIFAP からの予算と評価検査業務による自己収入の 2 種類がある。一方 OCIMA は完全な独立採算で、監査と検査料の 15%が収入となっている。CENEMA と OCIMA は、それぞれ検査・認証業務を開始してから収益を増やしており、現在までのところ必要な予算を確保していると言える。しかし、農業機械メーカーが製品の検査・認証を受ける動機はアリアンサ・コンティーゴの認証を受けた農業機械の購入に対して補助金を給付するプログラムの存在によるところが大きく、両センターの財政的自立発展性は政府の政策にかかっていると考えられる。したがって従来の評価検査・認証業務に加え、新しいサービスを提供することも考案し、政府政策に左右されにくい収入源を模索・確保する必要がある。

[5] Organismo de Certificación de Implementos y Maquinaria Agrícola

③　技術的自立発展性

CENEMA スタッフの技術レベルに関して、彼らは検査サービスを行うのに十分な技術を持っていると言える。事後評価実施時に CENEMA に派遣されていた日本人専門家によると、CENEMA はいくつかの検査科目については実践により技術を磨く必要があるが、検査機関として機能する能力を十分に兼ね備えている。同専門家によると、例えばプロジェクトが実施されていた 3 年前に技術移転が行われたトラクターPTO について、CENEMA が事後評価実施時にすでに評価検査を行っていることは大きな進歩であり、CENEMA スタッフが技術を習得するだけでなく習得した技術を向上させる能力も持っていることを示している。また、CENEMA スタッフは熱心さや勤勉さという、業務実施の基本的な姿勢を兼ね備えていると言う。この他、CENEMA スタッフは、ワークショップに参加したり他国の関係者と連絡を取ったりすることで継続的に知識・技術レベルを高める努力をしている。

SAGARPA の農業分野における機械化推進政策、CENEMA や OCIMA の人材開発、施設整備、予算拡充の現状を考慮すると、農業機械評価試験・認証システムの確立に必要な要素は満たされていると言える。しかし、同システムの強化とそれによるプロジェクトの自立発展性確保のためには、SAGARPA の農業機械化推進政策やアリアンサ・コンティーゴの補助金プログラムの他、メーカーや消費者（農家）によるメキシコ基準（NMX[6]）の重要性や必要性の認識が不可欠である。現時点では NMX が施行されてから日が浅いこともあってその重要性や必要性が十分認知されているとは言えず、今後この課題に取り組む必要がある。

3-2　プロジェクトの促進要因

（1）インパクト発現を促進した要因

最大の促進要因は、前述のアリアンサ・コンティーゴの補助金プログラムである。SAGARPA は、農家がアリアンサ・コンティーゴ補助金プログラムを通じて農業機械を購入する場合は、認証を受けた機械を購入するよう義務付けている。これがメーカーにとって NMX の認証を受ける動機となっている。

（2）自立発展性強化を促進する要因

これまで政策環境は農業機械化に対して良好であり、これがプロジェクトの自立発展性強化を促進した。

SAGARPA は、農業機械の購入に対する補助金プログラムの拡充を検討している。

3-3　プロジェクトの阻害要因

（1）インパクト発現を阻害した要因

アリアンサ・コンティーゴの補助金プログラム以外に、農家や農業機械メーカーに対する評価検査認証制度の普及戦略を立てていなかったため、農業機械の検査・評価及び認証制度の存在や意義が十分に認知されておらず、これがプロジェクトのインパクト発現にとって主要な阻害要因になったと考えられる。

（2）自立発展性強化を阻害する要因

農業機械の検査・評価基準は任意基準であり、検査・評価を受けるかどうかはメーカーの判断にゆだねられている。従って、農業機械の検査・評価制度は、補助金プログラムの存在のみにより維持されているのが現状であり、これはプロジェクトの自立発展を脅かす要因である。

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[6] Norma Mexicana

3-4　結論

プロジェクトの実施により、CENEMA は農業機械の検査・評価機関として着実に発展を遂げた。これが、OCIMA と呼ばれる認証機関の設立と相まって、メキシコにおける農業機械の検査・評価、認証システムは、一応の完成を見たといえる。

しかし同システムが十分に機能するための環境が整っていないのが現状である。つまり、メーカーが NMX を導入する必要性を十分に認知しておらず、農家も農業機械を選択する際自主的に NMX を選択の参考にするには至っていない。農業機械検査・評価・認証システムがさらに発展し、本来の機能を果たすようになるためには、メーカーや消費者である農家にその必要性、重要性を認識させ、メーカーに評価検査、認証を受けるモチベーションを与え、農家にシステムがもたらす便益を理解してもらうことが重要である。

3-5　提言

（1）NMX は消費者に安全で適正な農業機械を供給するという政府の方針に沿って策定されたこと、メキシコにおいては NMX が任意基準として有効に活用される環境が整っていないことを鑑みて、完全な民間主導で農業機械検査・認証を行うのではなく、政府が主導し、農業機械メーカーに対して検査・認証を規定する必要がある。

（2）農家に適正で安全な農業機械を提供するためには、現状にあった検査の実施が不可欠である。CENEMA は、農民やメーカーと協調して農業機械の故障、事故及びその原因に関する情報を収集し、現場の実情に合わせた検査プログラムの改善を図るべきである。

（3）CENEMA と INIFAP の各試験場が協力しながら、中小の農業機械メーカーに製品の品質向上のための技術支援を提供すべきである。それは、検査、認証を受ける農業機械の数の増加につながるはずである。

（4）SAGARPA や CENEMA は、その他の関係機関と協力して農業機械検査・評価・認証システムの重要性や便益に関する農民の意識向上活動を強化すべきである。

3-6　教訓

（1）本プロジェクトのプロジェクト・デザイン・マトリクス（PDM）においては、CENAPEMEA が良好に機能することが前提条件及び重要な外部条件とされていたが、同団体の運営予算がなかったことや参加機関のモチベーションが十分でなかったことが原因で結局これらが満たされることは無かった。PDM の前提条件や外部条件は慎重に吟味すべきである。さもないとプロジェクトの失敗につながる可能性がある。

（2）プロジェクト目標「農業機械の評価検査・認証システムの強化」は、システムを確立すること（評価検査・認証の開始）に加え、農家が評価検査認証制度を認知し、農業機械購入時の参考とすること、つまり農家に対する制度の普及も意味していた。上位目標では認証を受けた適正で安全な農業機械の開発と、その農家への普及を目指していた。両目標とも「農家への普及」という要素を含んでいるが、アリアンサ・コンティーゴの補助金制度以外に普及のための手段が考案されていなかったと言える。現在の農業機械市場（メーカー、農家）が NMX の必要性や重要性を認識するほど熟していないのであれば、そうした状況の中でいかに NMX を普及させていくか戦略を立てておく必要があったと考えられる。今後類似案件を形成する際には、プロジェクトを取り巻く環境を十分に把握し、その環境の中で実施可能な目標達成戦略を描いておくことが重要である。

（3）事後評価ではプロジェクト目標、上位目標の指標の具体的な数値が設定されていなかったため、その達成度を正確に測ることができなかった。指標はプロジェクトが目指す到達地点を明確にするとともに、プロジェクトマネージメントを確実かつ効果的に実施するためのものである。したがって、今後案件形成を行う際には現実的で計測可能な指標を明確に設定すべきである。

３－７　フォローアップ状況

プロジェクトの終了時において、トラクター試験 4 項目の検査技術の支援を、CENEMA がこれらの試験に必要な機材を調達することを条件に、フォローアップ協力としておこなうことが計画されていた。4 項目のうち 3 項目の試験機材が導入されたため、3 名の日本人専門家を派遣し技術指導をおこなった（2006 年 10 月終了）。

Table of Contents

1 Overview of the Evaluation Study

1.1 Period of Field Study for the Evaluation

October 4-20, 2006

1.2 Background of the Project and the Goal of Ex Post Evaluation

The modernization of farm management and improved social and economic welfare in rural areas through the mechanization of small- and medium-scale farmers and improved productivity are important within the context of overall Mexican agricultural policy. However, progress in agricultural mechanization has been sluggish due to, among other factors, the lack of active participation by government agencies in creating uniform standards for testing and evaluating agricultural machinery. This is essential in guaranteeing the quality and performance of agricultural machinery. Therefore, the Mexican government, via the Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA, formerly SAGAR), decided to introduce a system for testing and evaluating agricultural machinery performance. To carry out this important effort, the Mexican government requested Japanese government to provide project-type technical cooperation to establish testing methods and evaluation standards, and train technical personnel.

The Implementation Study team signed the Record of Discussions for the Agricultural Machinery Test and Evaluation Project in Mexico on September 9, 1998. In March of the following year, the project started. It was carried out for five years and ended in February 2004.

The study for this ex-post evaluation was carried out in October, 2006, two and a half years after the project was terminated. The evaluation examines to what degree the Overall Goal of the project has been achieved, analyzes what impact the project has had and whether it is sustainable at several levels, including system, institution and counterpart skills. Finally, recommendations and considerations for Japan's future cooperation will be presented.

1.3 Project Summary

The summary of the Project is presented below according to the final version of the Project Design Matrix (PDM) revised in September 2003.

(1) Overall Goal

Agricultural machinery with appropriate performance and safety for small and medium farmers are

developed and extended.

(2) Project Purpose

To strengthen evaluation test system through drafting of the methods and standards of evaluation tests as well as through the improvement of techniques and knowledge for the execution of evaluation test.

(3) Outputs

i. The types of machinery to be dealt with in the Project are selected on the results of preliminary surveys.
ii. Techniques for evaluation tests are improved.
iii. Evaluation standards are drafted.
iv. Experts for evaluation tests are fostered.
v. Evaluation test system is strengthened.

(4) Activities

1 Surveys on the actual condition of the production, marketing and adoption of agricultural machinery, and selection of the types of machinery to be dealt with in the Project

1-1 Baseline survey

1-2 Selection of which machinery would be tested

1-3 Detailed survey for selected machinery

2 Improvement of techniques for evaluation test of agricultural machinery

2-1 Selection of how to test and test items

2-2 Improvement of test techniques

2-3 Improvement of how to test

2-4 Making test manual

3 Drafting evaluation standards for agricultural machinery

3-1 Examination of draft agricultural machinery test standards

3-2 Examination of how to standardize the machinery

3-3 Examination of how to notify the results

4 Fostering experts in evaluation tests

4-1 Making study curriculum

4-2 Making teaching materials

4-3 Training

4-4 Following up participants

5 Intensify the evaluation test system

5-1 Study on the reconstruction and consolidation of evaluation system

5-2 Orientation for the operation of evaluation test system

5-3 Analyze how to diffuse results of evaluation test

5-4 Diffusion and extension of test results

5-5 Monitoring of test results

1.4 Evaluators

Maya Asakura (Chief of Evaluation), Consultant at IC Net Limited, Latin America Office
Keiko Kotani (Analysis and Evaluation), Junior Consultant at IC Net Limited, Latin America Office

1.5 Methodology Applied in the Study

Using the methodology of Project Cycle Management (PCM), an evaluation grid was created. Based on the grid, data were collected by reviewing documents and past reports, visiting the project site, carrying out surveys, and interviewing counterparts, experts, government officials, agricultural machinery manufacturers and university personnel. Subsequently, the project was evaluated on the basis of two evaluation criteria, that is, impact and sustainability.

2 Results of the Evaluation

2.1 Impact

(1) Achievement of the Project Purpose

According to the final evaluation report, the Project Purpose—namely, "To strengthen evaluation test system through drafting of the methods and standards of evaluation tests as well as through the improvement of techniques and knowledge for the execution of evaluation test"—was not accomplished at the time of the final evaluation. The report pointed out that the National Center for Testing and Evaluation of Agricultural Machinery and Equipment (CENAPEMEA) failed to function, which

impeded the full achievement of the Project Purpose, although it was deemed to have been almost met if measured by the following three indicators: 1) 7 draft standards submitted to the National Technical Committee for Machinery Standardization, Assessment and Agricultural Equipment (COTENNMAEA), 2) number of Mexican Standards (NMXs) enacted, and 3) number of training courses and participants. In other words, the failure of the full achievement of Project Purpose was due to the fact that some of the pre-conditions and important assumptions described in the PDM were not met.

First, this study examines to what extent the three indicators were accomplished and what measures were taken to resolve the malfunction of CENAPEMEA.

Table 1 shows the extent to which the Project Purpose has been achieved according to the indicators. Given that the project aimed at creating and enacting eleven standards, the indicators 1) and 2) can be considered to have been achieved after the final evaluation, although no target value was set in the PDM. Likewise, it is difficult to measure to what extent the indicator 3) has been accomplished as no target value was either suggested. However, the indicator 3) cannot be considered to have been met for the following two reasons: first, no training for testing tractors was held, and, second, there have been no institution that operates as a testing laboratory as a result of the training given by the National Center for Standardization of Agricultural Machinery (CENEMA), despite the fact that the training was intended for the establishment of other testing laboratories in Mexico apart from CENEMA.

Table 1: Achievement of the Project Purpose

Objectively Verifiable Indicator	Achievement
1. Seven draft standards submitted to COTENNMAEA	Eleven draft standards for seven kinds of machines were submitted to COTENNMAEA at the final evaluation.
2. Number of NMX standards enacted	At the final evaluation, six out of 11 NMXs were officially enacted and five were pending COTENNMEA authorization. Those five standards went into effect after the project ended (please see Annex 12 for details).

<table>
<tr>
<td>3. Number of training courses and participants</td>
<td>By the time of the final evaluation, 4 training courses were held for mechanical seeders, sprayers, disk plows, and disk harrows, while none had been held for the precision seeders, corn shellers, bean threshing, and all four types of testing for tractors. After the final evaluation and before the end of the Project, training courses on testing and certification for three types of machines were carried out as shown in the table below, primarily for universities interested in becoming a testing laboratory for those machines. On the other hand, no training has been organized for tractors to date because no institution is able to fully operate as a testing laboratory of tractors, generating no demands for training. University of Antonio Narro and UNAM have equipment for testing tractors but it is for educational use only. The schools are not very interested in becoming a testing laboratory as they must prioritize the educational use of the equipment over its practical use (testing products upon requests of manufacturers) and need to go through a complicated administrative procedure in order to enable such a use.
<table>
<tr><th>Type</th><th>Date of Training</th><th>Number of participants</th></tr>
<tr><td>Precision seeder</td><td>October, 2003</td><td>8</td></tr>
<tr><td>Corn sheller</td><td>November, 2003</td><td>9</td></tr>
<tr><td>Bean threshing</td><td>November, 2003</td><td>9</td></tr>
<tr><td>Tractor PTO</td><td>—</td><td>—</td></tr>
<tr><td>Tractor ROPS</td><td>—</td><td>—</td></tr>
<tr><td>Tractor hydraulic</td><td>—</td><td>—</td></tr>
<tr><td>Tractor traction</td><td>—</td><td>—</td></tr>
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</table>

CENAPEMEA, whose malfunction hindered the achievement of the Project Purpose, was established as a specialized organization that tested and certified agricultural machinery distributed in Mexico, and provided advice and training to farmers, agricultural machinery manufacturers and import traders. For this project, the organization was expected to function as a body to certify agricultural machinery.[1] However, it never functioned and remained nominal even at the time of this ex-post evaluation. According to a SAGARPA official, the CENEPEMEA was established on the advice of a Japanese expert dispatched in the pre-project period. The expert suggested that there should be entities to certify machines independent of organizations for drafting standards and implementing tests and evaluations of machines, in order to strengthen the system of evaluation tests, which was set as the Project Purpose later. Nevertheless, the entity never functioned properly because of a lack of funding to operate and the motivation of participating institutions. As a measure against this, the Organization for Certification of Implements and Agricultural Machinery (OCIMA) was established within the National Institute for Forestry, Agriculture and Livestock Research (INIFAP) in June 2005 with the assistance of

[1] "The Joint Evaluation Report on the Japanese Technical Cooperation for the Agricultural Machinery Test and Evaluation Project in Mexico," p. 8

SAGARPA.[2] The establishment of the OCIMA resulted in development of the evaluation test system. However, it cannot be said that the Project Purpose was successfully achieved, considering the definition given in the final evaluation report of "a strengthened evaluation test system. According to the report, the Project Purpose is considered to be achieved only when the following steps for the evaluation test system are completed:

① Agricultural machinery, for which evaluation standards are to be made, is selected.
② CENEMA prepares manuals on testing and drafts of evaluation standards for selected agricultural machinery.
③ COTENNMAEA examines the drafts of evaluation standards.
④ The testing-evaluation standards are enforced as official standards after completing legal procedures.
⑤ Testing organizations acquire appropriate facilities and skills for the testing & evaluation of agricultural machinery.
⑥ The testing organizations acquire adequate knowledge of issues concerning a system of testing & evaluation and certification.
⑦ The system of testing & evaluation and certification is established.
⑧ The system of testing & evaluation and certification starts operating.
⑨ Manufacturers, importers and farmers recognize well the system of the testing & evaluation and certification.
⑩ The system of testing-evaluation and certification contributes to the quality improvement by the manufacturers of the agricultural machinery, and gives farmers reference for the selection of machinery.

Steps 1 to 8 have been accomplished, although not as originally planned. However, 9 and 10 are not completely achieved according to those involved in the project because only those manufacturers and farmers that sell and obtain agricultural machinery through Alianza Contigo recognize and benefit from the system. Further explanation will be given subsequently regarding the relation with Alianza Contigo.

(2) Achievement of the Overall Goal

The Overall Goal of the project is that "agricultural machinery with appropriate performance and

[2] Please refer to page 13 in "Sustainability" for the overview of the OCIMA.

safety for small and medium farmers are developed and extended.[3] The achievement of the Overall Goal is verified by four indicators as follows: 1) increase in the number of certified agricultural machinery sold, 2) the number of new machinery registered, 3) the number of manufacturers which took a license examination, and 4) the number of machinery having taken a license examination.[4]

Nevertheless, the achievement cannot be measured because target values for each of the indicators are not set. Moreover, these indicators disregard the point of view of "small and medium farmers" referred to in the Overall Goal. For rectifying this problem, we modified the indicator 1 to "Increased number of certified agricultural machinery sold to small and medium farmers" and attempted to examine how broadly agricultural machinery with appropriate performance and safety were distributed to small and medium farmers. However, the data of the number of small and medium farmers who purchased agricultural machinery were not obtained.[5] Although it is difficult to determine the achievement of the Overall Goal due to the reasons given above, we tried to assess the effects generated by the project by analyzing data relevant to the indicators 1 to 4.

Table 2: Achievement of the Overall Goal

Objectively Verifiable Indicator	Achievement
1. Increased number of certified agricultural machinery sold to small- and medium-scale farmers	3,252 and 3,222 tractors were sold in 2005 and in 2006, respectively, through Alianza Contigo. Two manufacturers commented that there is an increase in the number of certified machines since 2005, the first year when certified machines were on the market. Manufacturer A: The share of certified machines is approximately 67% of all sales between September 2005 and September 2006. Total sales are unchanged from the previous period Manufacturer B: Total sales are unchanged from the previous period. Without certification, sales would have dropped.

[3] "Agricultural machinery with appropriate performance" means that accurate information is given on the quality and characteristics of the machine. For instance, there are cases in which the farmer purchases a wrong tractor because the horsepower is not indicated correctly. Accurate product information will prevent these problems, according to a SAGARPA official.

[4] According to a CENEMA counterpart, "registered" means that a manufacturer goes through the certification process after accepting the cost estimate for a certification given by OCIMA.

[5] Neither CENEMA nor manufacturers have data on the number of certified machines sold. These data must be requested from each of the distributors of agricultural machinery around the country. SAGARPA has data of the number of tractors purchased by farmers using subsidies from Alianza Contigo. However, the scale of these farmers is not known. Moreover, information on the number of certified tractors sold is available only for 2006, for it was in the year that Alianza Contigo made it mandatory to buy certified machines. SAGARPA does not have data on types of machinery purchased except in the case of tractors.

2. Counting new machinery registered	The following machines are registered as of October 2006 (including those that did not pass the test and re-registered): 38 Tractors 10 Sprayers 2 Fertilizers
3. Number of manufacturers which took a license examination	Three manufacturers for tractors and one for sprayer/fertilizer have taken license examinations as of October 2006. In addition to these four manufacturers, one manufacture is in the process of having its machines certified as of October 2006.
4. Number of machinery going through a license examination	24 models of tractors and two sprayers have taken a license examination as of October 2006 * Of those machines in the indicator 2, 18 are currently under evaluation. (Please see Annex 6-1 for details.)

As Table 2 shows, it is principally the tractors that are tested and certified. Below, we outline the reasons why the number of test evaluations and certifications for tractors is high and that for implements is low:

- In 2006, SAGARPA made it mandatory that farmers should purchase certified machines if he/she would like to buy a machine and use subsidies from Alianza Contigo, a national program to provide support in the agricultural sector. This is an incentive for agricultural machinery manufacturers to have their merchandise certified. Tractors represent 80-90% of all agricultural machinery purchased with subsidies provided by Alianza Contigo, leaving only 10-20% for implements. This means that it is more important for manufacturers to have tractors certified than implements. As a result, evaluation tests and certification for tractors outpace that for others. The number of implements purchased through the subsidy program is small for the following two reasons: first, farmers can purchase implements without relying on subsidies as they are more affordable than tractors, and second, SAGARPA does not have a completely positive view on subsidizing implements through Alianza Contigo because SAGARPA disapproves of the use of several implements due to their negative effects on soil conservation, which SAGARPA promotes.
- Machinery other than tractors requires more time and procedures to carry out evaluation tests, raising fees for both testing-evaluation and certification.

The Overall Goal consists of two parts: the one is that agricultural machinery with appropriate performance and safety (represented by the indicators 2-4) are produced, and the other is that agricultural machinery with appropriate performance and safety are distributed to small- and medium-scale farmers (the indicator 1). It is certain that the number of tractors certified is increasing. In contrast, the level of achievement is not high for implements, considering the number of cases of testing-evaluation and certification. It is difficult to gauge the effect of the project regarding the second part without having

relevant data, but we have two grounds for concluding that certified machinery is being steadily disseminated to medium-scale farmers: first, the majority of the certified tractors shown in Table 2 have 80-100 horsepower, the popular force among medium-scale farmers, and second, all tractors sold through Alianza Contigo are already certified. In contrast, dissemination to small-scale farmers will progress more slowly. According to interviews with project-related personnel, small-scale farmers are not in great need of agricultural machinery, for the use of machinery in their relatively small fields is not cost-efficient for them. Nonetheless, there are cases where small-scale farmers apply as a group for subsidies under Alianza Contigo to purchase machines.

(3) Contributing and impeding factors to the achievement of the Overall Goal can be identified as shown below:

i Contributing factors

a. CENEMA and OCIMA began to operate as a testing and evaluation center and a certifying body, respectively, with budgets allocated by SAGARPA.
b. SAGARPA made it obligatory that a farmer should buy a certified machine to receive a subsidy for the purchase.
c. The certification system became more widely known, thanks to publicity from SAGARPA and CENEMA

ii Impeding factors

a. NMXs are not recognized yet by all manufacturers because NMXs have not been in effect for long.
b. The only strong incentive that manufacturers put their products through testing and evaluation for certification is the resulting eligibility for subsidy of Alianza Contigo.
c. Farmers are not aware of the importance of acquiring a certified machine because NMXs are not recognized by many farmers.
d. One counterpart states that small- and medium-scale manufacturers that specialize in implements are not technically capable of making quality products which are good enough to be certified.

(4) Impact other than the Overall Goal of the Project

i Impact other than the Overall Goal observed at the final evaluation

a. The project has helped manufactures improve the quality of their products

Three out of four companies interviewed for this evaluation responded that the test results from CENEMA helped them improve the quality of their products. It is safe to say that the impact identified at the final evaluation has been sustained. One company stated that the test results did not necessarily influence the quality improvement as it already possessed sufficient techniques to pass the testing-evaluation.

b. The project influenced academic programs.

Several universities continue to teach subjects related to agricultural machinery. At the Autonomous University of Chapingo, 31 and 5 students are in the Master's and the Doctoral programs, respectively, pursuing degrees in agricultural mechanical engineering. The National Autonomous University of Mexico (UNAM) created a new program on agricultural mechanization in 2006. A UNAM professor stated that he introduces what he learned from his training in Japan in class. Similar influence can be seen at the University of Antonio Narro, which modifies textbooks based on the knowledge and techniques transferred by CENEMA.

c. CENEMA instructed students

After the project, CENEMA continued to invite students from Autonomous University of Chapingo and University of Antonio Narro to their center and offer them practice using the equipment and allowed them to observe how evaluation-tests are performed. These training programs are run under an agreement between CENEMA and the universities for the purpose of disseminating agricultural mechanization. Besides, CENEMA and a university plan to co-execute a project and work on several publications.[6]

d. CENEMA disseminates its activities

CENEMA has continued to hold an annual Field Day since the project ended. The number of participants has increased every year; in 2006 there were over 1,000 participants, almost double the number for its first year in 2004[7] CENEMA attends other events to disseminate the system for testing-evaluation and certification.

ii Impact other than the Overall Goal observed at the ex-post evaluation

a. Publicity campaign for the system of testing-evaluation and certification by manufacturers

Manufacturers place advertisements for their certified products in agriculture magazines and on their websites. According to an OCIMA staff member, this helps farmers learn about the

[6] This project is entitled "*Complejo Científico Docente en Mecánica Agrícola en Valle de México* (Scientific Teaching Complex in Agricultural Mechanics in the Valley of Mexico)."

[7] Please see Annex 9 for details.

system of testing-evaluation and certification.[8]

b. Higher credibility of machine quality and performance

Before the project, there was no organization that screened the information on product quality and performance given by manufacturers to consumers. Therefore, erroneous information was occasionally given to consumers. However, CENEMA thoroughly reviews the quality and performance of machines and verifies that there are no errors in the data provided by manufacturers. Thanks to this process, consumers can obtain accurate product information. According to a manufacturer who had their machinery certified, this helped elevate the credibility of their information and allowed consumers to select a machine based on accurate data.

2.2 Sustainability

(1) Institutional Sustainability

i National Policy

The "Sector Program for Agriculture, Livestock, Rural Development, Fisheries and Food 2001-2006" stresses the need for the use of agricultural machinery as a way to raise productivity. According to a SAGARPA official, the Secretariat will maintain the policy for promoting mechanization in agriculture. A new presidential administration will take office in December, 2006, in Mexico, but this will not affect the above-mentioned policy as the ruling party remains in power. Therefore, it is expected that the subsidy program will also continue under Alianza Contigo. Furthermore, SAGARPA plans to introduce assistance for machine renewal and a loan scheme for purchasing machines.

ii NMX standards

As mentioned earlier, those five draft standards that were pending official acknowledgement at the time of the final evaluation for tractor hydraulic lift, tractor traction, precision seeder, corn seeder and bean threshing became NMX standards in 2004. With this, all the 11 NMX standard drafts prepared by the project have been enacted. According to a SAGARPA official, SAGARPA aims to create more NMXs to bring more benefits to farmers and the country.

iii Testing-evaluation center

CENEMA was established during the project and began to operate in 2004 as a testing-evaluation center. The organization has both the equipment necessary to perform testing-evaluation of agricultural

[8] Please see Annex 14 for these advertisements and announcements

machinery and staff with the knowledge, skills and experience.[9] By the end of the ex-post evaluation, it was ready to perform the testing-evaluation for all agricultural machinery, with the exception of tractor traction.[10] CENEMA essentially functions as a testing laboratory and is in the process of being accredited by the Mexican Entity of Accreditation (EMA) to formalize its status as an official testing-evaluation center. Initially, this project envisioned that testing-evaluation responsibilities would be divided among multiple institutions under the CENAPEMEA. The ex-post evaluation revealed that only CENEMA performs the testing-evaluation.

Other institutions such as the Autonomous University of Chapingo, University of Antonio Narro and UNAM are still interested in becoming testing laboratories. However, currently they are not functioning due to the lack of demand and infrastructure. They are active in training future engineers of agricultural mechanics.

CENEMA transfers techniques they acquired through the project to other institutions, principally to universities. Table 3 details these activities.

Table 3: Courses Offered by CENEMA and OCIMA after the Project

Course	Period		Participants	
	Month/ Day	Year	Type	Num-ber
CENEMA				
Testing and Evaluation of Sprayers *Prueba y Evaluación de Aspersoras*	May 17-25	2005	Autonomous University of Chapingo, University of Antonio Narro, UNAM, UNIFAP, COTAXLA, Univesrity of Nuevo León	8
OCIMA				
Problem Resolution Model (Actions to Correct and Prevent) with Practical Application of Statistic Tools *Modelo de Resolución de Problemas (Acciones Correctivas y Precentivas) con Aplicación Práctica de la Herramientas Estadísticas*	February 13-14	2006	Data not available	15
Standard ISO 9004: 2000 for Improvement as a Pair of Improvement of ISO 9001: 2000 *La Norma de ISO 9004: 2000 de Mejora como Par de Mejora de la ISO 9001: 2000*	May 19	2006	Data not available	13

[9] Equipment to test tractors, which had not been acquired as of the final evaluation, arrived in 2005-2006, except the one that needed for tractor traction.

[10] Evaluation-tests for tractor traction have not started yet due to lack of equipment.

iv Certification organization

The CENAPEMEA never fulfilled its role as a certification organization as originally planned. However, in 2003 SAGARPA secured the budget to create a body to replace CENAPEMEA. As a result, OCIMA was established in June 2005, and began certifying agricultural machinery, except tractor traction, in September 2005. The organization has four staff members: a director, an auditor, a secretary and a housekeeper. OCIMA plans to be accredited by EMA when this is financially possible.

v Personnel retention

CENEMA currently retains four core staff members, including the director and three experienced investigators. Three investigators joined the center, two in 2003 and one in 2006. Each of the new investigators is responsible for testing tractor PTO, tractor hydraulic lift and tractor ROPS, respectively. INFAP underwent institutional restructuring in 2005 and, as a result, the officials who were involved in the project during the implementation were relocated to other departments. Some of them are no longer with INIFAP. At present, an official is in charge of follow-up on CENEMA. A SAGARPA official has continued to oversee CENEMA-related affairs since the cooperation period of the Project. Please refer to Annex 5 for the list of counterparts. Some SAGARPA counterparts have now retired, but the official who supervises CENEMA was a counterpart of the project, and the present director of the OCIMA used to be a counterpart in SAGARPA.

vi Condition of the equipment and materials provided by the Project

The majority of the machinery and equipment donated during the project continue to be in use and are well maintained. Some of the tools brought from Japan are not used as staff members do not know what they are for and how to use them. Please refer to Annex 7 for information on the use, operation and maintenance of the supplied machinery and equipment.

(2) Financial Sustainability

Both CENEMA and OCIMA have seen gains since they began their respective operations, so far securing the necessary budget. Table 4 details the budget and cost of the two organizations from 2004 through 2007. SAGARPA provided financial assistance with the amount of 20,000,000 and 22,200,000 pesos for the CENEMA and OCIMA, respectively, for setting up infrastructure to start their activities. CENEMA has two sources of funding: INIFAP and self-generated income from testing services. On the other hand, OCIMA operates on a self-sustained basis; their income originates from audits and their 15% share of the testing fee. Based on the projections made by the counterparts, by the end of 2006

CENEMA and OCIMA are expected to accrue approximately 200% and 150% of what they generated in 2005, respectively.

Table 4: CENEMA and OCIMA Budgets and Costs 2004-2007 (in Mexican pesos)

	Budget – SAGARPA (i)	Budget – INIFAP (ii)	Budget – Self-generated (iii)	Total Allocated (i) + (ii) + (iii) (for 2004) (ii) + (iii) + (v) (from 2005)	Cost (iv)	Carryover (v) = [(i) + (ii) + (iii)] - (iv)
CENEMA						
2004 [a]	20,000,000	1,200,000	0	21,200,000	8,207,778	12,992,222
2005	0	1,000,000	971,900	14,964,122	4,716,705	10,247,417
2006	0	500,000	1,116,300 [b]	11,863,717	1,580,312 [c]	10,283,405
2007	0	1,500,000 [d]	-	-	-	-
OCIMA						
2004a	2,200,000	0	0	2,200,000	344,404 (2003) 1,304,973 (2004)	550,623
2005	0	0	319,720	870,343	460,141	410,202
2006	0	0	346,630 [e]	756,832	-	-
2007	0	0	-	-	-	-

a. Fiscal year begins January and ends in December.
b, c. Until September.
d. Not authorized yet.
e. Until August; it is projected to gross 500,000 pesos in income by the end of 2006.

Both CENEMA and OCIMA made an auspicious start. Nevertheless, the willingness of manufacturers to have their products tested and certified depends to a high degree on the existence of Alianza Contigo. Therefore, it is safe to say that the ability of the two organizations to remain financially independent depends on the government policy. It is imperative that they develop additional fee-for-service activities to seek and secure a source of income that is not—or at least less—susceptible to the government policy.

(3) Techcnical Sustainability

The investigators can be said to possess an adequate level of technical skills and knowledge to render testing services. All CENEMA investigators completed three-month training sessions on agricultural mechanization in Japan during the project period. Three newer investigators who joined the center after the project also participated in the same training in Japan. Please see below for the summary of the counterpart training in Japan after the project. In addition, they received specialized technical

assistance from Japanese short-term experts in Mexico. CENEMA investigators stated that these training programs are the major source of their technical improvement.

Table 6 reviews the dispatch of Japanese short-term experts after the project:

Table 5: Counterpart Training in Japan after the Project

Counterpart	Period of Training	Institution	Area of Training
2004			
Mr. David Galicia García, investigator	March - June 2004	Tsukuba International Center / Bio-oriented Technology Research Advancement Center	Agricultural mechanization
Mr. Jaudiel Pliego García, investigator	March - June 2004	Tsukuba International Center / Bio-oriented Technology Research Advancement Center	Agricultural mechanization
2005			
No training held for the project for this year.			
2006			
Ms. Leticia Marín Omaña, investigator	March - June 2006	Tsukuba International Center / Bio-oriented Technology Research Advancement Center	Agricultural mechanization
Mr. Álvaro Morelos Moreno investigator	March - June 2006	Tsukuba International Center / Bio-oriented Technology Research Advancement Center	Agricultural mechanization

Table 6: Dispatch of Japanese Short-Term Experts after the Project

	Name of Expert	Period of Mission	Area of Technical Assistance
2004			
No. of Experts Dispatched			
2005			
1	Mr. Yasuro Sugiura	November 28 – December 2, 2005	Tractor PTO
2006			
2	Mr. Ei Seki	October 16 – 1 November, 2006	Tractor Hydraulic Lift
3	Mr. Shigeyoshi Tsukamoto	October 16 –1 November, 2006	Tractor ROPS

At the time of the ex-post evaluation, the equipment for tractor traction had not been purchased, yet. Therefore, no Japanese expert was dispatched, and the testing had not been started.

CENEMA investigators also enhance their knowledge by attending workshops and maintaining overseas contacts. Please refer to Annex 8 for a summary of the events that they participated in. CENEMA's overseas contacts include not only the experts previously dispatched from Japan but such other institutions as the University of Nebraska in the United States, Institute PANI of Canada and Agricultural Mechanization Station of Spain. The center came into contact with these institutions at international agricultural expositions held in Mexico.

Japanese experts who were contacted for interviews commented that, although in some areas CENEMA still needs to polish their technique through practice, it will be able to fully function as a testing laboratory. For instance, CENEMA is now performing tests for Tractor PTO, for which technical assistance was provided last year. One of the experts stated that this was a significant advance. This illustrates their ability to not only learn but to grow. Most importantly, the expert mentioned that CENEMA staff is highly enthusiastic and hard-working.

Considering the national policy for promoting mechanization in agriculture, the human resources, infrastructure, and budgetary development of CENEMA and OCIMA, we can conclude that the factors necessary for the consolidation of the agricultural machinery testing-evaluation and certification system have been satisfied. However, there are still several tasks to be carried out in order to develop and strengthen the system and secure the sustainability of the Project. These include Alianza Contigo and broader recognition of the importance and necessity of NMXs by manufacturers and consumers (farmers). In particular, the system's sustainability requires further efforts with NMXs; their importance and necessity have not been fully acknowledged in part because it has not been long since they were enacted.

(4) Contributing and impeding factors to Sustainability of the System of Agricultural Machinery Testing-Evaluation and Certification, and of INIFAP, CENEMA and OCIMA

i Contributing factors

Alianza Contigo is a crucial program for the promotion of agricultural mechanization and NMXs. Given that one of CENEMA's roles is to contribute to agricultural mechanization, the continuation of Alianza Contigo will sustain CENEMA as an institution as well as the system of agricultural machinery testing-evaluation and certification.

ii Impeding factors

According to a SAGARPA official, the background of the NMXs drafts is as follows: Mexico issued the Metrology and Standardization Law as a condition of the country's signing the NAFTA agreement. The law aimed to establish standards and rules not only for agricultural mechanization but for other areas, in the process creating many standards and rules. On one hand, those regarding health and environmental protection—areas the Mexican government particularly emphasizes—were made obligatory (such obligatory standards are called "NOMs"). On the other hand, NMXs are not obligatory but rather voluntary standards that manufacturers follow at their discretion. A SAGARPA official

explained that the Secretariat does not require NOMs for two reasons. First, the market is not mature yet and neither consumers nor manufacturers are fully aware of the importance of standards. Second, Mexico has only a single center for testing-evaluation and certification, making it impossible to test and certify all agricultural machines in the country. For this second reason, SAGARPA does not plan to make NOMs in the near future. In the event that the full operability of CENEMA and OCIMA as well as an increase in the number of testing-evaluation and certifying organizations makes it possible to establish NOMs, the SAGARPA official predicted that the need for obligatory standards would be gradually recognized.

So far, manufacturers have their products certified because subsidies are provided only for certified machines under Alianza Contigo. It would not be an exaggeration to state that the testing-evaluation and certification system functions solely due to the Alianza Contigo subsidy program. In other words, there are no other strong incentives that would persuade manufacturers to be certified. SAGARPA and CENEMA explain NMXs to farmers and encourage them to purchase certified machinery. However, the ex-post evaluation indicated that it is doubtful that they have an adequate understanding of the importance of obtaining certified machines. This could be an obstacle to the development of the testing-evaluation and certification system.

3 Conclusion

CENEMA has equipped its facility and trained its personnel in this Project. The fruits of these efforts include their newly acquired ability to test and evaluate ten kinds of agricultural machinery, with the exception of tractor traction, and to transfer their techniques to other institutions. In addition, products that are tested and evaluated by CENEMA can now be certified, thanks to the establishment of OCIMA. These accomplishments represent the completion of the testing-evaluation and certification system. Nonetheless, the current environment is not conducive to the system's full operability. Manufacturers do not have an adequate understanding of the importance of the NMXs and farmers do not pay much attention to the NMXs when selecting agricultural equipment. As long as an NMX is voluntary, promoting the system requires educating farmers and manufacturers on the need and importance of testing-evaluation and certification, and motivating manufacturers to have their products tested, evaluated and certified.

4 Recommendations

The system of testing-evaluation and certification has been recognized principally by major

agricultural machinery manufacturers. Nevertheless, the majority of machine types that have been tested and certified are tractors that can be sold with subsidy from Alianza Contigo. Many implements, which have limited eligibility for the subsidy program at this point, are yet to be tested and certified. On the other hand, farmers opt for a certified agricultural machine when obtaining one. This, however, is because they are required to choose certified machines in order to be eligible for subsidy, not because they examine the safety and quality of certified agricultural machines.

There are two chief kinds of certification: mandatory certification and voluntary certification. As exemplified by the ISO, one of the most globally renowned voluntary standards, voluntary certification provides clear advantage for those who get certified. This value as well as the certification system itself needs to be well known among stakeholders. In the case of NMXs, it is necessary that farmers, as consumers, become aware of the meaning and importance of NMXs and voluntarily select certified machines in order for manufacturers to be benefited from receiving certification. At this point, however, farmers do not fully recognize the meaning and importance, and manufacturers find it little beneficial to be certified. This is affecting negatively the development of the agricultural machinery certification system.

The Project had an objective that by NMXs the quality and safety of agricultural machinery in Mexico is guaranteed and good machinery is provided for consumers. Although NMXs were created and both human and infrastructural resources were obtained, only a portion of agricultural machinery has been certified, hindering the wide distribution of safe and appropriate agricultural machinery to farmers. We present four recommendations as follows to ensure that the Overall Goal is achieved:

(1) Testing-Evaluation and certification is regulated for agricultural machinery manufacturers.

Considering that NMXs were created following the governmental policy to provide consumers with safe and appropriate agricultural machinery and Mexico has yet to develop a ground where NMXs are effectively utilized as voluntary standards, it is necessary that the government rather than a private sector directs the agricultural testing-evaluation and certification system. As stated by a SAGARPA official, currently CENEMA are unable to test and evaluate all agricultural machinery from the standpoint of human and material resources. Nonetheless, it will be possible to gradually increase the types of agricultural machinery for testing, while the center prepares to put human resources and infrastructure in place. It will be up to the government's decision either to have CENEMA as a sole testing-evaluation entity, or enable universities and other organizations to become testing laboratories. In Japan, for example, the Institute of Agricultural Machinery is the only nationally accredited organization to perform testing-evaluation. This is in part because testing requires a wide range of facilities and

equipment, and in part because the latest technology developed by manufacturers has to be kept confidential and protected.

(2) CENEMA conducts tests that are adequate in the present condition in collaboration with farmers and manufacturers.

In order to make safe and appropriate agricultural machinery available to farmers, it is essential that testing always corresponds to the present agricultural condition. To this end, CENEMA should promote the improvement and development of agricultural machinery by collecting information on malfunctions, accidents and their causes in collaboration with farmers and manufacturers, sharing it with them, and reflecting the findings in its testing programs.

(3) Provide technical assistance to small and medium agricultural machinery manufacturers.

According to SAGARPA and CENEMA counterparts, small and medium manufacturers lack technical capacity to successfully have their products certified. The government needs to provide assistance for such manufacturers in addition to regulating the agricultural machinery testing-evaluation system. A strategy for this is that INIFAP's experimental fields in addition to CENEMA offer technical services to manufacturers.

Such services can include a training program for several manufacturers based on their level and/or customized individual technical instruction. Considering that CENEMA has only seven investigators, the former idea will be more feasible. Small and medium-sized manufacturers are eligible for subsidy programs such as Fondo a Pyme of the Secretariat of Economy. It would be effective for CENEMA to extend information on such programs.

According to a SAGARPA official, there are many experimental fields of INIFAP around the nation. The staff of those other experimental fields are not equipped with technical skills of testing-evaluation of agricultural machineries as much as the CENEMA counterparts in the INIFAP experimental field of Valle de Mexico. Yet, if the center transfers their skills to them, they will be able to provide services in geographical areas that are difficult for the CENEMA investigators to cover.

(4) Consumers understand the value of certified agricultural machinery

In addition to the promotion of testing-evaluation and certification by the government and the technical improvement of manufacturers, it calls for raising awareness of farmers as to the fact that they could enjoy safe and appropriate agricultural machinery due to it. SAGARPA through its state offices has encouraged farmers to buy certified agricultural machines and CENEMA has explained and advised

farmers to do so. The effect, however, is not seen enough at this ex-post evaluation. Farmers need to see the benefits of certified products instead of hearing about it before they choose to purchase these, which does take time. In addition to the on-going efforts of SAGARPA and CENEMA, additional activities will be required such as collaborated publicity between CENEMA and certified manufacturers. The manufactures can expect increase in the sales of their certified merchandize through this kind of attempt. Moreover, with more farmers in the future that recognize the importance of certification, more manufactures will be motivated, or compelled, to have their products tested, evaluated and certified.

5 Considerations for Future Projects

(1) Importance of a full examination of Pre-Conditions and Important Assumptions

A major issue in this project was the fact that the CENAPEMEA was not functioning by the time of the final evaluation, as mentioned earlier. The project was designed on the assumption of this organization's functionality; in the PDM, it was one of the Pre-conditions and also Important Assumptions for the Outputs, Project Purpose and Overall Goal to be achieved. Had the OCIMA not been established to replace the CENAPEMEA, the project would not have accomplished its goal. To avoid this kind of incident, it is necessary to carefully examine whether the Pre-Conditions have been met and the Important Assumptions will be satisfied before the project is initiated.

(2) Importance of analyzing the environment affecting the project and probing logic

The Project Purpose involved two elements: first, building a system, and second, extending the system to involve farmers so that they appreciate and make use of the system when they purchase agricultural machinery. The Overall Goal also had two elements: developing agricultural machinery that is certified, safe and appropriate, and distributing it to farmers. Both include a key component of "diffusion to farmers." The evaluation, however, demonstrated that no other measures for this diffusion were thought of besides the subsidy program under Alianza Contigo. As presented in the comments of the SAGARPA official above, strategies to promote the NMXs that were suitable for the state of the Mexican agricultural equipment market were essential, and this market was not mature enough to acknowledge the need and importance of the NMXs. If a similar project is formulated in the future, an understanding of the factors affecting the projects and strategies that are feasible in the particular environment are essential to attain the project purpose.

(3) Importance of setting target values for indicators in PDM

At the time of the ex-post evaluation, the achievement of some indicators for the Project Purpose and Overall Goal cannot be measured because target values for each of the indicators are not set. Target values are set to make the goal of project clear and helpful for the effective project management. Therefore, in the future formulation of a project, indicators with measurable target values shall be specified.

ANNEXES

Annex 1 Field Study Schedule

Date			Activity	Place
Wednesday	October 4, 2006	AM	Initial Meeting with CENEMA - Overview of PCM - Explanation of Ex-Post Evaluation Initial Visit to OCIMA	CENEMA, Texcoco OCIMA, Texcoco
Thursday	October 5, 2006	AM	Interviews with CENEMA counterparts	CENEMA, Texcoco
		PM	Interviews with CENEMA counterparts	CENEMA, Texcoco
Friday	October 6, 2006	AM	Interviews with CENEMA counterparts	CENEMA, Texcoco
		PM	Interview with Director of OCIMA	OCIMA, Texcoco
Saturday	October 7, 2006			
Sunday	October 8, 2006			
Monday	October 9, 2006	AM	Check of Supplied Equipments	CENEMA, Texcoco
		PM	Check of Supplied Equipments Data Collection Interview with Autonomous University of Chapingo	CENEMA, Texcoco INIFAP Experimental Field , Texcoco Department of Agricultural Mechanical Engineering at Autonomous University of Chapingo, Texcoco
Tuesday	October 10, 2006	AM	Check of Supplied Equipments	CENEMA, Texcoco
		PM	Data Collection Interview with an agricultural machinery manufacturer	CENEMA, Texcoco OCIMA, Texcoco
Wednesday	October 11, 2006	AM	Check of Supplied Equipments	CENEMA, Texcoco
		PM	Data Collection	CENEMA, Texcoco
Thursday	October 12, 2006	AM	Interview with an agricultural machinery manufacturer Interview with INIFAP	Federal District INIFAP Central Office, Federal District
		PM	Interview with INIFAP	INIFAP Central Office, Federal District
Friday	October 13, 2006	AM	Data Collection	CENEMA and OCIMA, Texcoco
		PM	Data Collection Interview with SAGARPA	CENEMA and OCIMA, Texcoco SAGARPA, Federal District
Saturday	October 14, 2006			
Sunday	October 15, 2006			
Monday	October 16, 2006	AM	Interview with UNAM	UNAM Faculty of Superior Studies – Cuautitlán
		PM	Data Analysis	
Tuesday	October 17, 2006	AM	Data Collection Interview with Field Chief of INIFAP	CENEMA, Texcoco INIFAP Exmerimental Field, Texcoco
		PM	Data Collection	CENEMA and INIFAP Experimental Field, Texcoco
Wednesday	October 18, 2006	AM	Telephone interview with University of Antonio Narro Telephone interview with agricultural machinery manufacturer	
		PM	Telephone interview with agricultural machinery manufacturer	
Thursday	October 19, 2006	AM	Interviews with SAGARPA	SAGARPA, Federal District
		PM	Data Analysis	
Friday	October 20, 2006	AM	Interviews with Japanese Experts	CENEMA, Texcoco
		PM	Data Collection	CENEMA and INIFAP Experimental Field, Texcoco

Annex 2: Interviewees

	Name	Organization/ Company	Title
1	Dr. Ramón Jiménez Regalado	CENEMA	Director
2	Mr. Marco Antonio Audelo Benítez	CENEMA	Investigator
3	Mr. Miguel Albarrán Millán	CENEMA	Investigator
4	Mr. Juan Gabriel Ochoa Bijarro	CENEMA	Investigator
5	Mr. David Galicia García	CENEMA	Investigator
6	Mr. Jaudiel Pliego García	CENEMA	Investigator
7	Ms. Leticia Marín Omaña	CENEMA	Investigator
8	Dr. Lourdes Gabriela Hoyos Fernández	OCIMA	Director
9	Ms. Grisel Ramírez Genis	OCIMA	Auditor
10	Mr. Eduardo Benítez Paulín	SAGARPA	Director General, Liaison and Technology Development
11	Mr. Marco A. Caballero García	SAGARPA	Director, Sustainability
12	Dr. Ramón Rios	INIFAP	Field Chief
13	Dr. René Camacho Castro	INIFAP	Director, Strategic Programs and Projects
14	Mr. Manuel García García	INIFAP	Director, Scientific and Technological Cooperation
15	Mr. Raúl Zamora Sánzhez	Case New Holland	Manager, Governmental Relations
16	Mr. Manuel Vázquez	John Deere	Manager, Market Research
17	Mr. Guillermo Barrera López	Swissmex-Rapid	Quality Control
18	Mr. Julian Zempoaltecatl	AGCO México	Distributor Development (through October 8, 2006)
19	Mr. Tomas Vázquez S.	Zeta Mex	Sales Manager
20	Mr. José Ramón Soca Cabrera	Autonomous University of Chapingo	Academic Vice-Director, Department of Agricultural Mechanical Engineering
21	Mr. Carlos Geraldo Deolarte Martínez	Autonomous University of Mexico (UNAM)	Professor, Faculty of Superior Studies - Cuautitlán
22	Dr. Martín Cadena Zapata	University of Antonio Narro	Professor
23	Mr. Ei Seki	Institute of Agricultural Machinery	Researcher, Tractor Testing Division
24	Mr. Shigeyoshi Tsukamoto	Institute of Agricultural Machinery	Researcher, ROPS Testing Division

Annex 3-1: Evaluation Grid Impact

Criteria	Evaluation Questions		Achievement Criteria / Measures	Data Needed	Data Sources	Data Collection Methods
	Main Questions	**Sub-questions**				
IMPACT	To what extent has the Project's Overall Goal been achieved?	Have agricultural machines with appropriate performance and safety for small and medium farmers been developed and disseminated?	Indicators of the Overall Goal (1) Increased number of sales of certified agricultural machines (2) Number of new machines registered (3) Number of manufacturers which took a license examination (4) Number of machines which took a license examination - Additional indicator(s), if needed, to verify the achievement of the Overall Goal.	(1) Number of sales of certified agricultural machines. (2) Number of new machines registered. (3) Number of manufacturers which took a license examination. (4) Number of machines which took a license examination. - Information on additional indicator(s), if needed	(1) Manufacturer survey (2) Manufacturer survey (3) Test report (4) Test report	(1), (2) Review of the study result (3), (4) Review of the test report
	To what extent has the Project contributed to the realization of the Overall Goal?	To what extent has the Project Purpose been achieved?	(1) 7 draft standards submitted to COTENNMAEA (2) Number of NMX standards enacted (3) Number of training courses and participants	(1) 7 draft standards submitted to COTENNMAEA (2) Number of NMX standards enacted (3) Number of training courses and participants	(1) Draft standards (2) Annual report of COTENNMAEA, Official Gazette (3) Project report	(1) Review of the draft standards (2) Review of the annual report and official gazette (3) Review of the Project report
		Has the Project contributed directly to the achievement of the Overall Goal? Is the logical relationship in the Project maintained?	The Project Purpose and the Overall Goal are logically related in such a way that the achievement of the former directly contributes to the achievement of the latter.	Logical relationship between the Project Purpose and the Overall Goal.	(4) PDM (5) Objectives tree of the Project (6) C/Ps, personnel of related institutions	(4), (5) Examination of the logical relationship (6) Interviews and/or questionnaires

	Has the important assumption between the Project Purpose and the Overall Goal been correct? Was there any influence by the important assumption between the Project Purpose and the Overall Goal?	- Was the necessary important assumption between the Project Purpose and the Overall Goal recognized adequately? Was the assumption correct? - Has the important assumption been fulfilled?	- The important assumption between the Project Purpose and the Overall Goal described in the PDM is appropriate. - The test duties of CENAPEMEA have been smoothed - The CENAPEMEA facilities have been maintained well.	- Logical relationship between the Project Purpose and the Overall Goal. - Process of the test - Conditions of the CENAPEMEA facilities.	(1) PDM (2) Objective tree of the Project (3) C/Ps, personnel of relevant institutions (4) CENAPEMEA facilities	(1), (2) Examination of the logical relationship (3) Interviews and/or questionnaires (4) Inspection of the facilities
	What were the factors that influenced positively and/or negatively the achievement of the Overall Goal?	- If the Overall Goal has been attained, what were the factors that contributed directly or indirectly to its achievement? - If the Overall Goal has not been achieved, what were the factors that impeded directly or indirectly its achievement?	- Factors that contributed to the achievement of the Overall Goal. - Factors that impeded the achievement of the Overall Goal.	- Factors that contributed to the achievement of the Overall Goal. - Factors that impeded the achievement of the Overall Goal.	(1) Project report (2) C/Ps, personnel of relevant institutions	(1) Review of the report (2) Interviews and/or questionnaires
	What positive and negative impacts has the Project made apart from those that were originally intended, and why and how have they occurred?	- What unexpected positive impact(s) was observed at the time of the final evaluation? - What unexpected negative impact(s) was observed at the time of the final evaluation? - What unexpected positive impact(s) was observed at the time of the ex-post evaluation? - What unexpected negative impact(s) was observed at the time of the ex-post evaluation?	- Positive impact(s) other than the Overall Goal (at the time of the final evaluation) - Negative impact(s) other than the Overall Goal (at the time of the final evaluation) - Positive impact(s) other than the Overall Goal (at the time of the ex-post evaluation) - Negative impact(s) other than the Overall Goal (at the time of the ex-post evaluation)	- Unexpected positive impact(s) made directly or indirectly by the Project (at the time of the final evaluation) - Unexpected negative impact(s) made directly or indirectly by the Project (at the time of the final evaluation) - Unexpected positive impact(s) made directly or indirectly by the Project (at the time of the ex-post evaluation) - Unexpected negative impact(s) made directly or indirectly by the Project (at the time of the final evaluation)	(1) Report on the final evaluation of the Project (2) C/Ps, personnel of relevant institutions	(1) Review of the report (2) Interviews and/or questionnaires

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Annex 3-2: Evaluation Grid Sustaibability

Criteria	Evaluation Questions		Achievement Criteria/ Measures	Data Needed	Data Sources	Data Collection Methods
	Main Questions	Sub-questions				
SUSTAINABILITY	Has the system of the test and evaluation of agricultural machinery been sustained and further developed since the end of the Project, and will it continue to develop?	(1) Have the 5 standards which were not yet implemented as NMX by the time of final evaluation put into effect officially? (2) Does CENEMA transfer technology, skills and information to other institutions? (Mechanism for dissemination of skills, technology and knowledge) (3) Has CENEMA become a testing laboratory? (4) Does CENEPEMEA, a certification body of agricultural machines, fulfill its role? (5) Has SAGARPA established a certification body in INIFAP as reported in the final evaluation report of the Project? (6) Have the institutions with a high interest in becoming testing laboratories that participated in the training course of the Project, such as the University of Antonio Narro, the University of Chapingo, the University of Nuevo Leon, UNAM, the INIFAP Experimental Station in Veracruz, been certified as testing laboratories?	(1) 5 standards have been officially implemented as NMX. (2) The CPs of CENEMA transfer skills and provide information to relevant institutions. (3) CENEMA has become a testing laboratory. (4) CENEPEMEA has necessary organizational structure and personnel to fulfill its role. (5) A certification body has been established within INIFAP and fulfills its role. (6) Institutions including the University of Antonio Narro, the University of Chapingo, the University of Nuevo Leon, UNAM, and the INIFAP Experimental Station in Veracruz have become testing laboratories.	(1) Information on the implementation of the 5 standards (2) Activities carried out by CENEMA for transferring skills and providing information to relevant institutions. (3) Certification as a testing laboratory. (4) Information on the organizational structure and activities of CENEPEMEA. (5) Information on the organizational structure and activities of the certification body established within INIFAP. (6) Certification as a testing laboratory.	(1) CENEMA (2) CPs of CENEMA (3) Director of CENEMA (4) Member institutions of CENEPEMEA (5) SAGARPA, INIFAP, and the certification body established within INIFAP (6) SAGARPA, relevant institutions	(1) Interviews and/or questionnaires (2) Interviews and/or questionnaires (3) Interviews and/or questionnaires (4) Interviews and/or questionnaires (5) Interviews and/or questionnaires (6) Interviews and/or questionnaires

	Has the capacity of INIFAP pertaining to the test and evaluation of agricultural machinery been sustained and further developed since the end of the Project, and will it continue to develop?	(1) Do the CPs of SAGARPA, INIFAP and CENEMA still belong to and work in the same institutions and/or departments?	(1) The CPs of the Project belong to the same institutions and/or departments and make good use of their knowledge, skills and experiences acquired through the Project.	(1) Personnel retention, current assignment and responsibility of the CPs.	(1) CPs	(1) Interviews and/or questionnaires
		(2) Have INIFAP and CENEMA secured their budgets?	(2) SAGARPA allocates necessary budgets for INIFAP and CENEMA. CENEMA secures its own source of funding by providing services.	(2) Budgetary situation of INIFAP and CENEMA	(2) Accounting data of SAGARPA, INIFAP and CENEMA	(2) Review of accounting data
		(3) Has CENEPEMEA secured its budgets?	(3) CENEPEMEA secures its budgets.	(3) Budgetary situation of CENEPEMEA	(3) Accounting data of CENEPEMEA	(3) Review of accounting data
		(4) Do the CPs maintain and/or improve their skills?	(4) The skill level of the CPs has been maintained or improved.	(4) Skill level of the CPs	(4) CPs, relevant institutions	(4) Interviews and/or questionnaires
		(5) At the time of final evaluation of the Project, it was reported that there was still room for improvement in the skills of the CPs of CENEMA regarding the examination test of tractor. Have they improved their skills?	(5) Engineers of CENEMA have been trained in the examination techniques on tractors.	(5) Skill level of the engineers regarding the examination techniques on tractors	(5) CPs of CENEMA	(5) Interviews and/or questionnaires
		(6) Have the equipment and materials provided by the Project been maintained well?	(6) The equipment and materials provided by the Project have been maintained well and are in good condition.	(6) Conditions of the equipment and materials provided by the Project	(6) Equipment and materials provided by the Project CPs	(6) Inspection of the equipment and materials Interviews and/or questionnaires
	What have been the factors that contributed or inhibited the development of the system of the test and evaluation of agricultural machinery as well as of the capacity of INIFAP, and what would be the possible factors that might influence them in the future?	(1) Does the Ministry of Agriculture, Livestock, Rural Development, Fishery and Foods (SAGARPA) maintain its policy on mechanization in agriculture?	(1) There has been no change in the policy of SAGARPA on mechanization in agriculture.	(1) The policy of SAGARPA on mechanization in agriculture	(1) Sector Program on Agriculture, Livestock, Rural Development, Fishery and Foods	(1) Review of the Sector Program
		(2) Does SAGARPA continue running the programs of Alianza Contigo to promote mechanization in agriculture?	(2) SAGARPA keeps running the programs of Alianza Contigo to promote mechanization in agriculture.	(2) The programs of Alianza Contigo to promote mechanization in agriculture including subsidy program for purchase or repair of agricultural machines.	(2) Programs of Alianza Contigo	(2) Review of the programs of Alianza Contigo
		(3) Are there other relevant factors?	(3) Existence of other relevant factors if any	(3) Information on other possible factors	(3) relevant organizations	(3) Interviews with relevant organizations

Annex 4: PDM

(3) PDM for Evaluation

Project Name: The Agricultural Machinery Test and Evaluation Project
Revised September 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The Overall Goal is that agricultural machinery with appropriate performance and safety for small and medium farmers are developed and extended	1. Increased number of sold of certificated agricultural machinery 2. Counting new machinery registered 3. No. of manufacturers which took a license examination 4. No. of machinery which took a license examination	1- Manufacturer survey 2. Manufacturer survey 3. Test report 4. Test report	A. To continue the cooperative plan for farmers
Project Purpose The purpose of the Project is to strengthen evaluation test system through drafting of the methods and standards of evaluation tests as well as through the improvement of techniques and knowledge for the execution of evaluation test.	1. 7 draft standards submitted to CONENNMEA 2. No. of NMX standards enacted 3. No. of training course and participant	1. Draft standards 2. Annual report of COTENNMAEA, Official Gazette 3. Project report	A. To smooth test duties of CENAPEMEA B. Maintenance of CENAPEMEA facilities
Outputs 9. The types of machinery to be dealt with in the Project are selected on the results of preliminary surveys. 10. Techniques for evaluation tests are improved. 11. Evaluation standards are drafted. 12. Experts for evaluation tests are fostered. 5. Evaluation test system is strengthened.	1. 1st year's survey report 2. Manual of how to test 3. No. of standardized machinery 4. No. of participants in training activities 5-1. Publicity to administrator about test system 5-2. Publicity to farmers about standardization 5-3. Publicity to manufacturers about standardization	1. Project report 2. Project report 3. Project report 4. Project report 5-1. Survey for officer 5-2. Survey for farmers 5-3. Survey for manufacturers	A. Maintenance of CENAPEMEA test equipment B. To express opinions of the standardization national committee C. Official publication of standard and evaluation procedure
Activities 1. Surveys on the actual condition of the production, marketing and adoption of agricultural machinery, and selection of the types of machinery to be dealt with in the Project. 1-1. Baseline survey 1-2. Selection of which machinery would be tested 1-3. Detailed survey for selected machinery 2. Improvement of techniques for evaluation test of agricultural machinery 2-1. Selection of how to test and test items 2-2. Improvement of test techniques 2-3. Improvement of how to test 2-4. Making test manual 3. Drafting evaluation standards for agricultural machinery 3-1. Examination of draft agricultural machinery test standards 3-2. Examination of how to standardize the machinery 3-3. Examination of how to notify the results 4. Fostering experts of evaluation tests 4-1. Making study curriculum 4-2. Making teaching materials 4-3. Training 4-4. Following up participants 5. Intensify the evaluation test system 5-1. Study on the reconstruction and consolidation of evaluation system 5-2. Orientation for the operation of evaluation test system 5-3. Analyze how to diffuse results of evaluation test 5-4. Diffusion and extension of test results 5-5. Monitoring of test results	**Inputs** **Japanese side** Dispatch of long-term experts Chief Advisor Coordinator Evaluation test systems Evaluation tests (performance) Evaluation tests (durability) Short-term experts Some experts/year Provision of equipment Acceptance of counterpart training in Japan Some counterparts /year **Mexican side** Position of counterpart Project Manager (Director of CENEMA) Counterpart for each field (2 counterparts for each field) Staff necessary for the operation of the Project Offer land and facilities Facilities Offices Local costs Management / operation cost		A. Enough chance to study for CENAPEMEA members (experts, administrator, the person in charge of diffusion, manufacturers of agricultural machinery, etc.) **Pre-Condition** A. Function CENAPEMEA and great cooperation by CENAPEMEA B. Confirmation of needs for the project by manufacturer C. Increasing the domestic production of agricultural machinery

Annex 5: List of Counterparts

Organization	Name	Degree Possessed	Title	Period of Assignment
CENEMA	Ramón Jímenez	Doctor	Director of CENEMA	March 2004 – Present
CENEMA	Marco Antonio Audelo Benítez	Engineer	Investigator of Implements	July 2002 – Present
CENEMA	Miguel Albarrán Millán	Master in Mechanical Engineering	Investigator of Implements	April 2001 - Present
CENEMA	Juan Gabriel Ochoa Bijarro	Master of Science	Investigator of Performance Group	July 1999 – Present (August 2003 – September 2005 University of Guanajuato)
CENEMA	Jaudiel Pliego García	Engineer	Investigator of Tractor PTO	July 2003 - Present
CENEMA	David Galicia García	Master of Science	Investigator of Tractor Hidraulic	July 2003 – Present
CENEMA	Leticia Marín Omaña	Engineer	Investigator of Tractor ROPS	June 2004 - Present
CENEMA	Adrian Aragón			On Leave Kyoto University
CENEMA	Julio Torres			On Leave Master in Mechatronics at Cuernavaca
CENEMA	David Moremo Rico	Doctor	Investigator of Standardization	Retired in September 2006
CENEMA	Álvaro Morelos Moreno		Investigator	On Leave Master in Mechanization at Autonomous University of Chapingo
SAGARPA	Eduardo Paulín Benítez	Engineer	Director General, Liaison and Technology Development	August 2003 - Present
SAGARPA	Marco Antonio Caballero García	Engineer	Director, Sustainability	March 1999 – Present
INIFAP	Manuel García García	Master of Arts	Director, Scientific and Technological Cooperation	2004 – Present
OCIMA	Lourdes Gabriela Hoyos Fernández	Doctor	Director	March 1999 - Present
OCIMA	Grisel Ramírez Genis	Engineer	Auditor	2004 - Present

Year	No.	Equipment	Manufacturer	Make	Model	Date Tested	Status	Standard based on which test was performed (1)	Standard based on which test was performed (2)
2005	1	Agricultural Tractor	Industrias John Deere, S.A. de C.V.	John Deere	5715	7/14/05	Certified	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	2	Agricultural Tractor	Industrias John Deere, S.A. de C.V.	John Deere	5415	7/14/05	Certified	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	3	Agricultural Tractor	Industrias John Deere, S.A. de C.V.	John Deere	6403	7/14/05	Certified	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	4	Agricultural Tractor	Industrias John Deere, S.A. de C.V.	John Deere	5615	7/14/05	Retested 1/31/06	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	5	Sprayer	Swissmex-Rapid, S.A. de C.V.	Swissmex	SW 920.095	7/19/05	Retested 5/3/06	NMX-O-179-SCFI-2002	
	6	Sprayer	Swissmex-Rapid, S.A. de C.V.	Swissmex	SW 891.020	7/19/05	Retested 5/3/06	NMX-O-179-SCFI-2002	
	7	Sprayer	Swissmex-Rapid, S.A. de C.V.	Swissmex	SW 891.040	7/19/05	Certified	NMX-O-179-SCFI-2002	
	8	Sprayer	Swissmex-Rapid, S.A. de C.V.	Swissmex	SW 880.006	7/19/05	Retested 5/26/06	NMX-O-179-SCFI-2002	
	9	Sprayer	Swissmex-Rapid, S.A. de C.V.	Swissmex	SW 890.006	7/19/05	Under Eval.	NMX-O-179-SCFI-2002	
	10	Fertilizer	Swissmex-Rapid, S.A. de C.V.	Swissmex	SW 641.001	7/19/05	Retested 9/26/06	NMX-O-168-SCFI-2002	
	11	Agricultural Tractor	CNH Industrial, S.A. de C.V.	New Holland	TB 120	10/21/05	Retested 3/9/06	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	12	Agricultural Tractor	CNH Industrial, S.A. de C.V.	New Holland	7610	10/21/05	Retested 3/2/06	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	13	Agricultural Tractor	CNH Industrial, S.A. de C.V.	New Holland	TT 75	10/21/05	Retested 3/17/06	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	14	Agricultural Tractor	CNH Industrial, S.A. de C.V.	New Holland	6610	10/25/05	Retested 3/24/06	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	15	Agricultural Tractor	CNH Industrial, S.A. de C.V.	New Holland	TB 100	10/25/05	Certified	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	16	Agricultural Tractor	CNH Industrial, S.A. de C.V.	New Holland	5610	10/25/05	Retested 3/22/06	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	17	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Massey Ferguson	475	12/7/05	Passed. Not for certification	NMX-O-169-SCFI-2002	
	18	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Massey Ferguson	490	12/7/05	Passed. Not for certification	NMX-O-169-SCFI-2002	
2006	19	Agricultural Tractor	Industrias John Deere, S.A. de C.V.	John Deere	5615	1/31/06	Certified at 2nd	NMX-O-169-SCFI-2002	
	20	Agricultural Tractor	Industrias John Deere, S.A. de C.V.	John Deere	5425	1/31/06	Certified	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	21	Agricultural Tractor	Industrias John Deere, S.A. de C.V.	John Deere	5625	1/31/06	Certified	NMX-O-169-SCFI-2002	
	22	Agricultural Tractor	Industrias John Deere, S.A. de C.V.	John Deere	5725	1/31/06	Certified	NMX-O-169-SCFI-2002	
	23	Agricultural Tractor	CNH Industrial, S.A. de C.V.	New Holland	7610	3/2/06	Certified at 2nd		NMX-O-207-SCFI-2004
	24	Agricultural Tractor	CNH Industrial, S.A. de C.V.	New Holland	TB 120	3/9/06	Certified at 2nd	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	25	Agricultural Tractor	CNH Industrial, S.A. de C.V.	New Holland	TT 75	3/17/06	Certified at 2nd	NMX-O-169-SCFI-2002	
	26	Agricultural Tractor	CNH Industrial, S.A. de C.V.	New Holland	5610	3/22/06	Certified at 2nd	NMX-O-169-SCFI-2002	
	27	Agricultural Tractor	CNH Industrial, S.A. de C.V.	New Holland	6610	3/24/06	Certified at 2nd	NMX-O-169-SCFI-2002	
	28	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Challenger	WT 460	3/27/06	Certified	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	29	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Challenger	WT 380	3/27/06	Certified	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	30	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Challenger	WT 390	3/27/06	Certified	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	31	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Massey Ferguson	MF 5300	4/7/06	Under Eval.	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	32	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Massey Ferguson	MF 475	4/12/06	Certified	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	33	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Massey Ferguson	MF 490	4/12/06	Certified	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	34	Sprayer	Swissmex-Rapid, S.A. de C.V.	Swissmex	SW 920.095	5/3/06	Retested 9/26/06	NMX-O-179-SCFI-2002	
	35	Sprayer	Swissmex-Rapid, S.A. de C.V.	Swissmex	SW 891.020	5/3/06	Certified at 2nd	NMX-O-179-SCFI-2002	
	36	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Massey Ferguson	MF 465	5/26/06	Certified	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	37	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Massey Ferguson	MF 492	5/26/06	Retested 8/17/06	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	38	Sprayer	Swissmex-Rapid, S.A. de C.V.	Swissmex	SW 880.006	5/26/06	Retested 9/26/06	NMX-O-179-SCFI-2002	
	39	Agricultural Tractor	Industrias John Deere, S.A. de C.V.	John Deere	6415	6/1/06	Certified	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	40	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Challenger	WT 470	6/2/06	Under Eval.	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	41	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Massey Ferguson	MF 5310	6/2/06	Under Eval.	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	42	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Massey Ferguson	MF 492	8/17/06	Under Eval.	NMX-O-169-SCFI-2002	
	43	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Massey Ferguson	MF 5300	8/17/06	Under Eval.	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	44	Agricultural Tractor	Industrias John Deere, S.A. de C.V.	John Deere	6603	8/31/06	Certified	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2005
	45	Agricultural Tractor	AGCO México S. de R. L. de C.V.	Massey Ferguson	5310	9/26/06	Under Eval.	NMX-O-169-SCFI-2002	
	46	Sprayer	Swissmex-Rapid, S.A. de C.V.	Swissmex	SW 920.095	9/26/06	Under Eval.	NMX-O-179-SCFI-2002	
	47	Sprayer	Swissmex-Rapid, S.A. de C.V.	Swissmex	SW 880.006	9/26/06	Under Eval.	NMX-O-179-SCFI-2002	
	48	Fertilizer	Swissmex-Rapid, S.A. de C.V.	Swissmex	SW 641.001	9/26/06	Under Eval.	NMX-O-168-SCFI-2002	
	49	Agricultural Tractor	McCormick Tractores de México S. de R. L. de C.V.	McCormick	CMAX 95	Under document review			
	50	Agricultural Tractor	McCormick Tractores de México S. de R. L. de C.V.	McCormick	CMAX 105	Under document review			
	51	Agricultural Tractor	McCormick Tractores de México S. de R. L. de C.V.	McCormick	MB 85	Under document review			
	52	Agricultural Tractor	McCormick Tractores de México S. de R. L. de C.V.	McCormick	MB 65	Under document review			
	53	Agricultural Tractor	McCormick Tractores de México S. de R. L. de C.V.	McCormick	CX 105	Under document review			
	54	Agricultural Tractor	McCormick Tractores de México S. de R. L. de C.V.	McCormick	CX 95	Under document review			
	55	Agricultural Tractor	CNH Industrial, S.A. de C.V.	New Holland	JX 80	2006/10/6	In audit and testing phase - Under evaluation		
	56	Agricultural Tractor	CNH Industrial, S.A. de C.V.	New Holland	JX 95	2006/10/9	In audit and testing phase - Under evaluation		

Annex 6-2 **Machinery and Equipment Certified by the OCIMA**

Manufacturer		Equipment	Make	Model	Certificate Good For	Standard based on which test was performed (1)	Standard based on which test was performed (2)
Industrias John Deere, S.A. de C.V.	1	Agricultural Tractor	John Deere	5415	09/07/05 - 09/07/08	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	2	Agricultural Tractor	John Deere	6403	09/07/05 - 09/07/08	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	3	Agricultural Tractor	John Deere	5715	09/07/05 - 09/07/08	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	4	Agricultural Tractor	John Deere	5425	05/23/06- 05/23/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	5	Agricultural Tractor	John Deere	5625	05/23/06- 05/23/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	6	Agricultural Tractor	John Deere	5725	05/23/06- 05/23/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	7	Agricultural Tractor	John Deere	5615	05/23/06- 05/23/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	8	Agricultural Tractor	John Deere	6415	06/19/06-06/19/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	9	Agricultural Tractor	John Deere	6603	10/05/06-10/05/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2005
CNH Industrial, S.A. de C.V.	10	Agricultural Tractor	New Holland	7610	03/13/06- 03/13/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	11	Agricultural Tractor	New Holland	TB 100	03/13/06- 03/13/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	12	Agricultural Tractor	New Holland	TB 110	03/13/06- 03/13/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	13	Agricultural Tractor	New Holland	TB 120	04/05/06- 04/05/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	14	Agricultural Tractor	New Holland	TT 75	04/05/06- 04/05/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	15	Agricultural Tractor	New Holland	5610	04/05/06- 04/05/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	16	Agricultural Tractor	New Holland	TB 80	04/05/06- 04/05/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	17	Agricultural Tractor	New Holland	6610	04/05/06- 04/05/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	18	Agricultural Tractor	New Holland	TB 90	04/05/06- 04/05/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
AGCO México S. de R. L. de C.V.	19	Agricultural Tractor	Challenger	WT 380	04/25/06- 04/25/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	20	Agricultural Tractor	Challenger	WT 390	04/25/06- 04/25/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	21	Agricultural Tractor	Massey Ferguson	475	05/26/06- 05/26/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	22	Agricultural Tractor	Massey Ferguson	490	05/26/06- 05/26/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	23	Agricultural Tractor	Challenger	460	05/24/06- 05/24/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
	24	Agricultural Tractor	Massey Ferguson	465	06/19/06-06/19/09	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004
Swissmex-Rapid, S.A. de C.V.	25	Sprayer	Swissmex	SW 891.020	06/30/06-06/30/09	NMX-O-179-SCFI-2002	
	26	Sprayer	Swissmex	SW 891.040	06/30/06-06/30/09	NMX-O-179-SCFI-2002	

Annex 7 **List of Supplied Machinery, Equipment and Materials**

Machinery, equipment and materials worth JPY 100,000 or over

Year	Place		Description			Quantity	Final Evaluation (2003)		Ex-Post Evaluation (2006)		Remarks
			Item	Manufacturer	Model		Frequency of Use	Condition (maintenance)	Frequency of Use	Condition (maintenance)	
1998	Plant #2	L	Automobile	General Mortors	SUBURBAN	1	A	A	A	A	There are four more cars
	Administration Office	E	Personal Computer etc.	COMPAQ	DESKPRO633C	1	A	A	B	A	
	Plant #1	E	Strain Gauge Meter	KYOWA	DPM-601A	1	C	A	C	A	
	Plant #1	E	Recorder of Above	GRAPHIC	SR651-1	1	C	A	C	A	
	Plant #1	E	Slip Ring	NATIONAL	SRB-5	1	C	A	C	A	
	Administration Office	E	Personal Computer	TOSHIBA	DYNABOOKSATELITE2520	1	A	A	C	C	
	Administration Office	E	Printer	CANON	LPB-740	1	A	A	C	A	
	Administration Office	E	Gauge Tool Kit	KYOWA	GTK-77	1	B	A	B	A	
	Administration Office	E	Video Camera	VICTOR	GR-DVL7	1	A	A	A	A	
	Administration Office	E	FaxPrinter	XEROX	LASERWINDOF FICE204W	1	A	A	A	A	
	Administration Office	E	Personal Computer etc.	IBM	THINKPAD390-20J	1	A	A	X	B	
1999	Administration Office	L	Digital video camera	SONY	DCR-TVR900Num.SERIE:1085463	1	A	A	A	A	
	Plant #1	L	Electric Chain Block	APOLLO	APOLLO	1	C	A	C	A	
	Plant #1	L	Reduction motor	U.S	MOTOREDUCTOR:TipoCbu,Mca,U.S	1	B	A	A	A	
	Plant #2	L	Plow	JOHNDEER	3645	1	B	A	A	A	
	Plant #2	L	Harrow	JOHNDEER	660(20DISCOS)	1	B	A	A	A	
	Administration Office	L	Personal Computer	COMPAQ	PRESARI07973	6	A	A	B	A	There were three at the final eval.
	Plant #1	L	Garage Jack	OMEGA	#GA205	1	A	A	A	A	
	Plant #1	E	Personal Computer	SHARP	PC-FJ120M	1	A	A	X	B	
	Plant #1	E	Digital Video Camera	SONY	DCR-PC100	1	A	A	A	A	
	Plant #1	J	Fuel Consumption Meter	MITSUTOYO	FR2140H DF-210A	1	C	A	A	A	
	Plant #1	J	Cone Penetrometer	DAIKI	DIK-5500	1	B	A	A	A	
	Plant #1	J	Cone Penetrometer	DAIKI	DIK-5521	1	B	A	B	A	
	Plant #1	J	Load Cell	KYOWA DENGYO	LUH-100KF, RJ-5	1	C	A	C	A	
	Plant #1	J	Load Cell	KYOWA DENGYO	LUH-100KF, RJ-21C	1	C	A	C	A	
	Plant #1	J	Load Cell	KYOWA DENGYO	LUH-1TF, RJ-2	1	C	A	C	A	
	Plant #1	J	Load Cell	KYOWA DENGYO	LUH-STFA	1	C	A	C	A	
	Plant #1	J	Surface Plate	YUNISEIKI	UJ105	1	C	A	A	A	
	Plant #1	J	Load Cell Indicator	KYOWA DENGYO	SDB-410CS	3	C	A	A	A	There was one at the final eval.
	Plant #1	J	Load Cell Indicator	KYOWA DENGYO	SLW-220PC, SLE-10H	3	C	A	A	A	There was one at the final eval.
	Plant #1	J	Load Cell Indicator	KYOWA DENGYO	WGA-710A-0	1	C	A	A	A	
	Plant #1	J	Strain Amplifier	KYOWA DENGYO	DPM-711B, DB-120S3-8, DB120L	12	C	A	B	A	
	Plant #1	J	Steam Waher	BANZAI	SHW-700-60	1	A	A	A	A	
	Plant #2	J	Rockwell Hardness Tester	MITSUTOYO	FR-3E, HRC30-35, etc	1	C	A	C	A	
	Plant #2	J	Vickers Hardness Tester	MITSUTOYO	FV-7E, HV-700	1	C	A	C	A	
	Plant #1	J	Parts Washer's Stand	VICKERS	WS-15F	1	B	A	C	A	

Annex 7 **List of Supplied Machinery, Equipment and Materials**

Machinery, equipment and materials worth JPY 100,000 or over

Year	Place		Description			Quantity	Final Evaluation (2003)		Ex-Post Evaluation (2006)		Remarks
			Item	Manufacturer	Model		Frequency of Use	Condition (maintenance)	Frequency of Use	Condition (maintenance)	
	Administration Office	J	Digital Still Camera	NIKKON	COOLP1X195	2	B	A	B	A	
	Plant #1	J	Incubator	KU	DN-600	1	A	A	A	A	
	Plant #2	J	Metal Hardness Tester	AKASHI	SH-5ARV	1	C	A	X	A	
	Plant #2	J	Metal Polisher	MARUTO	ML-110N	1	C	A	A	A	
	Plant #1	J	Water Flowmeter	AICHI TOKEI(FLO-TEC)	SW50C-N	1	C	A	X	A	
	Plant #1	J	Water Flowmeter	AICHI TOKEI(FLO-TEC)	SW100C-N	2	C	A	X	A	There was one at the final eval.
	Plant #1	J	Axle Load Meter	KYOEI GIHAN	SR-10M	1	C	A	X	A	
	Administration Office	J	Dividing Head	YUKIWA SEIKO	DMB-75-24	1	C	A	—	—	
	Plant #1	J	Camera w/Zoom Lenz	NIKON	F70	1	C	A	B	A	
	Plant #1	J	Torque Meter	KYOWA DENGYO	TP-20KMCB	1	C	A	B	A	
	Plant #1	J	Torque Meter	KYOWA DENGYO	TP-100KMCB	1	C	A	X	A	
	Plant #1	J	Flow Meter	FLO-TEC	FSC-500	1	C	A	A	A	
	Plant #1	J	Flow Meter	FLO-TEC	TDP-3321-E	1	C	A	A	A	
	Plant #1	J	Data Logger	KEYENCE	L810B	1	C	A	C	A	
	Plant #1	J	Data Logger	KEYENCE	L840	1	C	A	C	A	
	Plant #1	J	Data Logger	YOKOGAWA(KEYENCE)	PD-30	2	C	A	A	A	
	Plant #1	J	Standard Manometer	NAGANO KEIKI	PD23-M11-5MpaEsp	1	C	A	C	A	
	Plant #2	J	Metallographic Microscope	OLYMPUS	BX60-31E31MB, PM10S P-355	1	C	A	C	A	
	Plant #1	J	Interface Card	NIPPON NATIONAL	777438-02PCMCIA-GPIP	1	B	A	—	—	
2000	Plant #1	L	Tractor	NewHolland	3010DobleTrac.	1	B	A	A	A	
	Plant #1	E	AC Reactor	Fujitec	LR2-15	1	B	A	B	A	
	Plant #1	E	PWM Converter	KYOWA DENGYO	RHC15-2A	1	B	A	—	—	
	Plant #1	J	Standard Transmitter	RION CALIBRATOR	NC-72	1	B	A	X	A	
	Plant #1	J	Osciloscope	YOKOGAWA	OR300E, OR342-2PM	1	C	A	C	A	
	Plant #1	J	Strain Amplifier	KYOWA (YOKOKAWA DENGYO)	DPM-601A	2	C	A	B	A	
	Plant #3	J	Rotary	MATSUYAMA	PU-1705F-3S, A15LG/RG18	1	B	A	A	A	
	Plant #3	J	Rotary	MATSUYAMA	DX-2401NA	1	B	A	A	A	
	Plant #3	J	Cultivator	MATSUyA	RK-311	1	B	A	A	A	
	Plant #3	J	Cultivator	TOYO NOHKI	TCV-3	1	B	A	A	A	
	Plant #1	J	PTO Torquemeter	KOEI GIHAN	TQR-50KF65	2	B	A	B	A	
	Plant #1	J	Electrical White Board	KOKUYO	BB-VR236FCW-BBA-Pck1	1	A	C	A	A	
	Administration Office	J	Personal Computer Soft	MICROSOFT	Visual Basic6.0 Professional Edition	1	A	A	A	A	
	Administration Office	J	Personal Computer Soft	AutodeskCAD	AurCAD2000	1	A	A	A	A	
	Administration Office	J	Computer Soft	Kabview	Labview Basic Package	1	A	A	A	A	
	Plant #1	J	Soil Specific Volume Scale	FUJIWARA	Yamanakatype	1	A	A	X	A	
	Plant #1	J	Hardness Tester	AKASHI	HH-140	1	A	A	X	A	
	Plant #1	J	Incubator	YAMATO	IN801	1	B	A	B	A	
	Plant #1	J	KTC Toolsets	KTC	SK5500A	1	A	A	A	A	
	Plant #1	L	Forklift	TOYOTA	42-7FG18	1	A	A	A	A	
	Plant #1	L	Seeder disk type	AMSSA	387-5HD	1	B	A	A	A	
	Plant #1	L	Pneumatic seeder	JAS	LAUFEL.NEUM	1	B	A	A	A	
	Plant #1	L	Boom sprayer	JAS	AG1PEL651	1	B	A	A	A	
	Plant #1	L	Tri-point sprayer	(SWIN) HOWE	000-810040	1	B	A	A	A	
	Plant #1	L	Spot welding machine	MAC'S	MACS12KVA	1	B	A	A	A	
	Plant #1	L	Concrete mixer	TRIUNFO	502	1	B	A	A	A	

Annex 7 **List of Supplied Machinery, Equipment and Materials**

Machinery, equipment and materials worth JPY 100,000 or over

Year	Place		Description			Quantity	Final Evaluation (2003)		Ex-Post Evaluation (2006)		Remarks
			Item	Manufacturer	Model		Frequency of Use	Condition (maintenance)	Frequency of Use	Condition (maintenance)	
2001	Plant #1	J	Aluminium Bridge	KUBOTA	SBA-740-40-2	4	B	A	A	A	There were two at the final eval.
	Plant #1	J	Digital PH Meter w/Normal Solution PH7Y031	HORIBA SEISAKUJO	B-212	1	B	A	B	A	
	Plant #1	J	Crane	NIPPON KOUGYOU	TF-2	1	A	A	A	A	
	Plant #1	J	Anemometer	NIPPON KANOMA?	6631A	1	B	A	B	A	
	Plant #1	J	Sieve Shaker	TERAOKA	S-1	1	B	A	A	A	
	Plant #1	J	Labo Working Bench	SANKOU IRIKA	BCF-1800DU	3	A	A	A	A	
	Plant #1	J	Side Table	SANKOU IRIKA	ESJ-1800U	10	B	A	A	A	
	Plant #1	J	Side Table	SANKOU IRIKA	BSE-1800U	4	B	A	A	A	
	Plant #1	J	Labo Working Bench	SANKOU IRIKA	EWG-II-1800U	4	B	A	A	A	
	Plant #1	J	Soil Analuzer	FUJIWARA SEISAKUJO		1	B	A	X	A	
	Plant #1	J	Indicator for Strain Gauge	KYOWA DENGYO	SLW-220PC, SLE-10H	2	B	A	A	A	
	Plant #1	J	Vibrationmeter	SYOWA SOKKI	1332A	1	B	A	B	A	
	Plant #1	J	Tonner&others	CANON etc		1	A	A	A	A	
	Plant #1	J	A/D Converter	ELECTRONICA	ELK3012A	1	B	A	C	A	
	Plant #1	J	Infared Moisture Tester	KETT Elect. Lab.	FD-620	1	B	A	B	A	
	Plant #1	J	Compact Disk and Others	Maxcell etx.		1	B	A	A	A	
	Plant #1	J	Load Cell	KYOWA	LUH-5TF	1	B	A	C	A	
2002	Plant #1	L	Grain moisture meter	SEEDBURO	919	1	B	A	C	A	
	Plant #1	L	Thermohigrometer	HANNA	93640	1	B	A	A	A	
	Plant #1	L	Reduction motor	JIV 10HP	MA-120	2	B	A	C	B	
	Plant #1	L	Reductor	SIEMENS	40025180	2	B	A	C	B	
	Plant #1	L	Reduction motor	JIV 20HP	MA-250	2	B	A	C	B	
	Plant #1	L	Reductor	SIEMENS	40025182	2	B	A	C	B	
	Plant #1	L	Reduction motor	JIV 40HP	MAPI-450	1	B	A	C	B	
	Plant #1	L	Reductor	SIEMENS	40025185	1	B	A	C	B	
	Plant #1	L	Grain selector	SEEDBURO	112	1	C	A	X	B	
	Plant #1	L	Tractor	VALTRA	BM110	1	B	A	A	A	
	Plant #1	L	Precision scale	ADAMLAB	AAA250L	2	B	A	C	A	
	Plant #1	L	Harrow	AMSSA	753NG	1	B	A	A	A	
	Plant #1	L	Non tallage planter	JUMIIL	JM-2090	1	B	A	A	A	
	Plant #1	L	Photocopy machine	CANON	IR-3300	1	A	A	A	A	
	Plant #1	L	Video projector	PANASONIC	PT-L720	1	B	A	B	A	
	Plant #1	L	Bean thresher	EL PROGRESO	PR7615	1	B	A	A	A	
	Plant #1	L	Generator	EVANS	8KVA	4	B	A	B	A	There was one at the final eval.
	Plant #1	J	Load Cell	KYOWA	LUH2TF	5	-	-	C	A	
	Plant #1	J	Load Cell	KYOWA	LUH-5TF	5	B	A	C	A	
	Plant #1	J	Load Cell	KYOWA	LUH-10TF	2	B	A	C	A	
	Plant #1	J	Load Cell	KYOWA	LUH-1TF	3	B	A	C	A	
	Plant #1	J	Load Cell	KYOWA	LUH-100KF	2	B	A	C	A	
	Plant #1	J	Engine Revolution Gauge	ONO SOKKI	SE-1520	1	B	A	A	A	
	Plant #1	J	Sound Level Meter	ONO SOKKI	LA-1210	1	B	A	B	A	
	Plant #1	J	Portable Generator with Spare Parts	HONDA	EU-10i,(EU-9i)	2	B	A	C	A	
	Administration Office	J	LCD Projector	SONY	VPL-PX11	1	B	A	A	A	
	Administration Office	J	Degital Video Camera	SONY	DCR-TRV50	1	B	A	B	A	
	Administration Office	J	VHS Video Tape Recorder	PANASONIC	AG-W3	1	B	A	C	A	

Frequency of Use: A Daily B Often C Sometimes X: Not in Use
Condition: A: Good B: Fair C: Poor

Annex 8: Courses the CENEMA Participated after February 2004

	Course	Date	
		Month/Day	Year
1	Elaboration of Quality Manual Guide ISO/IEC-17025: 1999	March 8-9	2004
2	Elements for the implementation of the quality control Guide ISO/IEC-17025: 1999 (first part)	May 27-28	2004
3	Elements for the implementation of the quality Guide ISO/IEC-17025: 1999 (second part)	June 24-25	2004
4	Project Management	July 16	2004
5	Certification Scheme of Agricultural Implements	December 1	2004
6	Workshop on elaborating the OCIMA strategic and operational plan	January 12	2005
7	Specific Scheme of Certification of Agricultural Tractors	February 15	2005
9	Techniques of Spraying	May 4	2005

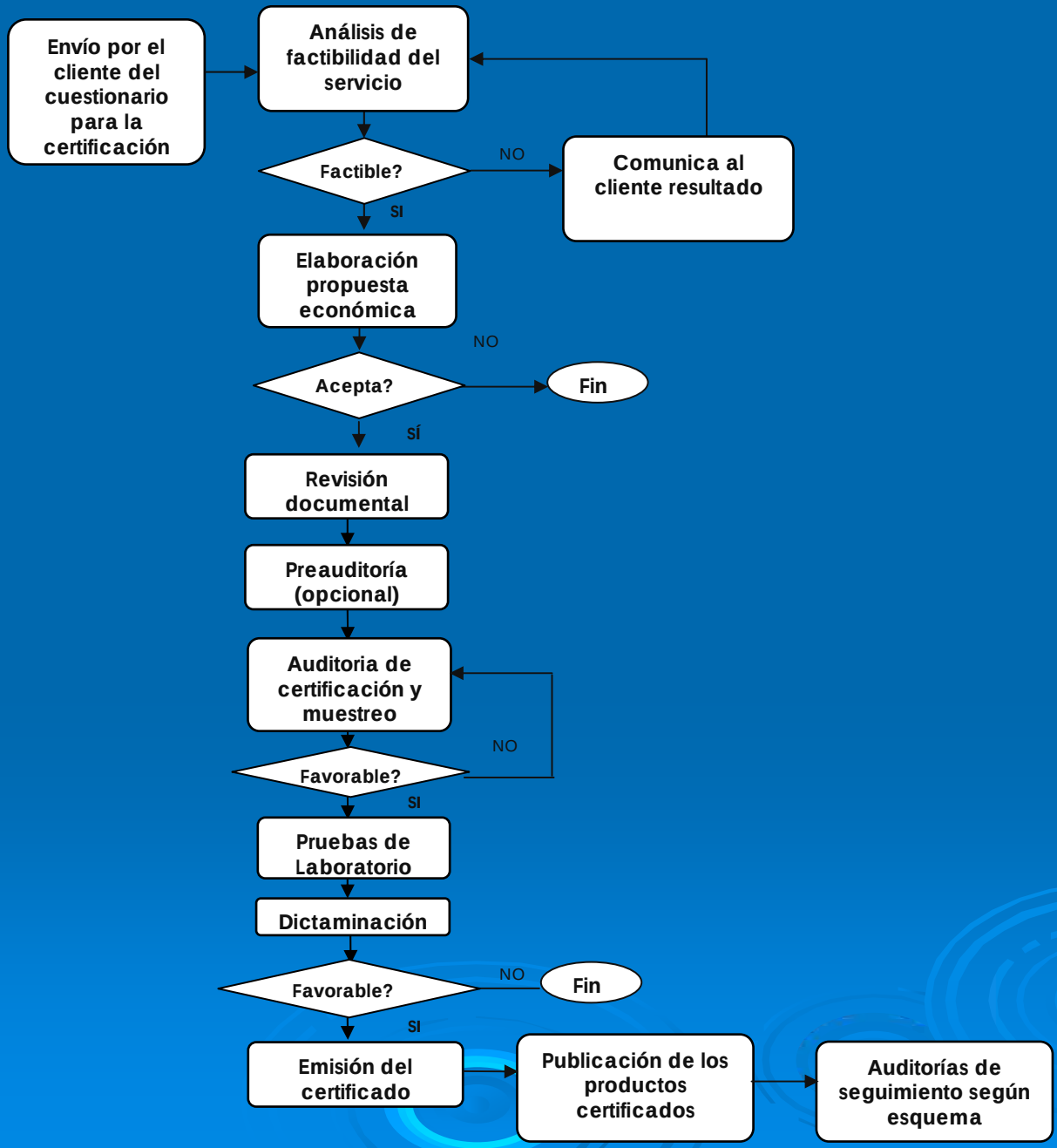
Annex 9: Public Events the CENEMA Hosted or Participated

Event	Activity and Target Population	Place	Approximate Number of Participants or Those the CENEMA Attended To	Date / Period
Field Day (*Día de Campo*) CEVAMEX* (2006)	Presentation, distribution of leaflets Farmers, students	CEVAMEX,* Texcoco, Estado de México	1,000	September 21 – 22, 2006
Field Day (*Día de Campo*) CEVAMEX* (2005)	Presentation, distribution of leaflets Farmers, students	CEVAMEX,* Texcoco, Estado de México	797	September 22 – 23, 2005
Field Day (*Día de Campo*) CEVAMEX* (2004)	Presentation, distribution of leaflets Farmers, students	CEVAMEX,* Texcoco, Estado de México	420	September 27 – 28, 2004
Agriculture and Food Expo (*Expo Agroalimentario*)	Distribution of leaflets Farmers, students	Irapuato, Guanajuato	80,000	November 9 – 12, 2005
Agricultral Expo Sinaloa (*Expo Agro Sinaloa*)	Distribution of leaflets Farmers, students	Culiacán, Sinaloa	40,000	End of January – beginning of February, 2005

* CEVAMEX: Experimental Field of the INFAP in Valle de Mexico

Annex 10: Process of Testing - Evaluation and Certification

Proceso de certificación



Annex 11: Sample Certificate Issued by OCIMA

Etiquetas de Certificación

Medidas: 7.6 cm. x 6.0 cm. Formato horizontal
Material : Poliéster Negro
Nota:

-Cualquier reproducción que no sea autorizada por OCIMA - INFAP se aplicarán las sanciones establecidas en los "Lineamientos para la certificación y uso de marca de conformidad de productos certificados por el OCIMA - INIFAP".

Contorno: *Línea del cuadro,* 2 pts.
Tipografía Texto: *Producto Certificado,* Arial Bold 12 pts.
Tipografía Texto: Potencia máxima a la TDF y Capacidad de LH a los 610 mm, Arial Bold 9 pts.
Tipografía (E*spacio para escribir el valor certificado por OCIMA*), Arial Bold 9 pts.
Tipografía (E*spacio para escribir el código asignado por OCIMA),* Arial Bold 10 pts.
Tipografía (*Lugar y fecha de expendición),* Arial Bold 8 pts.
Formato del código de barras, No.128
Color de contenido (Áreas Blancas): Plata

E J E M P L O:

Certificado

Medidas: 21.5 cm. X 28.0 cm. Formato vertical
Papel : Tipo Seguridad
Notas:

- Cualquier reproducción que no sea por OCIMA se aplicarán las sanciones establecidas en la ley.

- Por cuestiones de seguridad no se especifican las caracteristicas de este documento

inifap
Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias.

OCIMA
Organismo de Certificación de Implementos y Maquinaria Agrícola

CERTIFICADO

Otorgado a:

Logotipo Empresa

(NOMBRE DE LA EMPRESA)

Dirección de la Empresa

Por haber demostrado la conformidad de sus productos:
(Nombres de los productos certificados)

Conforme al esquema: **(Nombre del Esquema),**
y ensayados con los métodos de prueba de las normas
(Nombres de las Normas).

vigencia:
día/mes/año al día/mes/año

Presidente del Comité Rector del OCIMA- INIFAP

Directora del OCIMA-INIFAP

Lugar y fecha de expedición del certificado

Numero de certificado

Annex 12 **Status of the 11 NMXs for Agricultural Machinery Drafted by the CENEMA**

Equipment or Machinery	Joint Seeder and/or Mechanical Fertilizer	Pneumatic Precision Seeder	Sprayer	Tractor				Disk Plow	Disk Harrow	Corn Sheller	Bean Threshing
				PTO	Hydraulic	ROPS	Traction				
CENEMA begins studying testing methods and standards	8/1999	10/2001	01/2000	02/2001	12/2002	11/2001	12/2002	1/2001	9/2001	6/2002	6/2002
CENEMA finishes drafting NMX	11/2000	8/2003	9/2001	2/2001	1/2003	11/2001	1/2003	7/2002	7/2002	9/2003	9/2003
COTENMAEA begins examining NMX draft	2/15/2001	9/8/2003	10/4/2001	2/15/2001	2/26/2003	12/5/2001	2/26/2003	8/30/2002	8/30/2002	9/9/2003	9/9/2003
COTENMAEA finishes examining NMX draft	6/5/2001	12/5/2003	2/13/2002	11/8/2001	5/9/2003	7/31/2002	5/9/2003	12/09/2002	12/09/2002	10/10/2003	10/10/2003
COTENMAEA signs NMX draft	9/20/2001	05/12/2003	2/13/2002	11/8/2001	6/18/2003	7/31/2002	6/18/2003	9/26/2002	9/26/2002	10/10/2003	10/10/2003
CENEMA→DGFA Sends NMX Draft	9/25/2001	12/10/2003	2/13/2002	-	6/3/2003	8/6/2002	7/3/2003	9/30/2002	9/30/2002	10/20/2003	10/20/2003
DGFA→DGN, SECON Request for public hearing	10/2/2001	1/15/2004	5/13/2002	11/27/2001	6/15/2003	8/7/2002	7/15/2003	10/1/2002	10/1/2002	10/21/2003	10/21/2003
Draft is posted in *Diario Oficial* for Public Hearing	10/30/2001	4/9/2004	7/11/2002	2/8/2002	8/19/2003	9/23/2002	8/19/2003	11/8/2002	11/8/2002	4/9/2004	4/9/2004
Public hearing ends	12/30/2001	6/9/2004	9/11/2002	4/8/2002	10/19/2003	11/23/2002	10/19/2003	1/8/2003	1/8/2003	4/9/3004	6/9/2004
DGFA→DGN, SECON Request for enforcing NMX	1/24/2002	6/29/2004	9//25/2002	4/9/2002	10/24/2003	1/23/2003	10/24/2003	1/23/2003	1/23/2003	6/29/2004	6/29/2004
NMX is issued in *Diario Oficial*	3/20/2002	10/13/2004	12/5/2002	6/18/2002	4/8/2004	4/17/2003	4/8/2004	4/17/2003	4/17/2003	10/13/2004	10/13/2004
NMX goes into effect	5/20/2002	12/13/2004	2/15/2003	8/18/2002	4/8/2004	6/17/2003	7/8/2004	6/17/2003	6/17/2003	12/13/2004	12/13/2004
Number of NMX	NMX-O-168-SCFI-2002	NMX-O-222-SCFI-2004	NMX-O-179-SCFI-2002	NMX-O-169-SCFI-2002	NMX-O-207-SCFI-2004	NMX-O-181-SCFI-2003	NMX-0-203-SCFI-2004	NMX-O-182-SCFI-2003	NMX-O-183-SCFI-2003	NMX-O-216-SCFI-2004	NMX-O-221-SCFI-2004
Draft Manual	1/2000	2/2002	7/2000	11/2005	11/2005	-	-	3/2001	10/2001	11/2002	10/2002
Final Manual	9/2000	7/2003	8/2001	-	-	-	-	7/2002	7/2002	7/2003	7/2003

Annex 13: *Diario Oficial* (Official Diary) for Approved NMXs Published by the Secretariat of Economy

SECRETARIA DE ECONOMIA

INSUBSISTENCIA de declaratoria de libertad de terreno número I-01/2002.

Al margen un sello con el Escudo Nacional, que dice: Estados Unidos Mexicanos.- Secretaría de Economía.

INSUBSISTENCIA DE DECLARATORIA DE LIBERTAD DE TERRENO I-01/2002

Con fundamento en lo dispuesto por los artículos 1o. y 14 párrafo segundo de la Ley Minera, y 6o. párrafo final de su Reglamento, y de acuerdo con la atribución conferida por el artículo 33 fracción VIII del Reglamento Interior de la Secretaría de Economía, se deja insubsistente la declaratoria de libertad contenida en la Relación de Declaratorias de Libertad de Terreno 03/2002, publicada en el **Diario Oficial de la Federación** el 1o. de marzo de 2002, cuyos datos se precisan a continuación:

AGENCIA	EXPEDIENTE	NOMBRE DEL LOTE	SUPERFICIE (HAS.)	MUNICIPIO	ESTADO
CHIHUAHUA, CHIH.	30990	VICTORIA	75	GUADALUPE Y CALVO	CHIH.

Lo anterior, en virtud de que la solicitud en cuestión no llegó a amparar legalmente terreno alguno, ya que en la fecha de presentación de ésta, aún no surtía efectos la publicación de la Declaratoria de Libertad de Terreno del lote Victoria T-183753, sobre el cual pretendió fincarse.

México, D.F., a 8 de marzo de 2002.- El Director General de Minas, **Luis Raúl Escudero Chávez.**- Rúbrica.

DECLARATORIA de vigencia de la Norma Mexicana NMX-O-168-SCFI-2002.

Al margen un sello con el Escudo Nacional, que dice: Estados Unidos Mexicanos.- Secretaría de Economía.- Dirección General de Normas.

DECLARATORIA DE VIGENCIA DE LA NORMA MEXICANA QUE SE INDICA

La Secretaría de Economía, por conducto de la Dirección General de Normas, con fundamento en lo dispuesto por los artículos 34 fracciones XIII y XXX de la Ley Orgánica de la Administración Pública Federal; 51-A, 51-B y 54 de la Ley Federal sobre Metrología y Normalización; 46 y 47 del Reglamento de la Ley Federal sobre Metrología y Normalización, y 23 fracciones I y XV del Reglamento Interior de esta Secretaría y habiéndose satisfecho el procedimiento previsto por la ley de la materia para estos efectos, expide la declaratoria de vigencia de la norma mexicana que se enlista a continuación, misma que ha sido elaborada y aprobada por el Comité Técnico de Normalización Nacional de Maquinaria, Accesorios y Equipo Agrícola. El texto completo de la norma que se indica puede ser consultado gratuitamente en la biblioteca de la Dirección General de Normas de esta Secretaría, ubicada en Puente de Tecamachalco número 6, Lomas de Tecamachalco, sección Fuentes, Naucalpan de Juárez, código postal 53950, Estado de México o en el Catálogo Mexicano de Normas que se encuentra en la página de Internet de la Dirección General de Normas cuya dirección es: http://www.economia-normas.gob.mx.

La presente Norma entrará en vigor 60 días después de la publicación de esta Declaratoria de vigencia en el **Diario Oficial de la Federación.**

CLAVE O CODIGO	TITULO DE LA NORMA
NMX-O-168-SCFI-2002	TRACTORES, IMPLEMENTOS Y MAQUINARIA AGRICOLA-SEMBRADORAS-SEMBRADORAS UNITARIAS Y/O FERTILIZADORAS ACCIONADAS MECANICAMENTE, CON DOSIFICADOR DE SEMILLA DE DISCO-ESPECIFICACIONES Y METODO DE PRUEBA.
Campo de aplicación	
Esta Norma Mexicana establece las especificaciones mínimas de calidad y el método de prueba para evaluar el funcionamiento, desempeño, durabilidad, seguridad y facilidad de operación de las sembradoras unitarias y/o fertilizadoras mecánicas con dosificador de semilla de disco, nuevas que se comercialicen en la República Mexicana.	
Concordancia con normas internacionales	
Esta Norma Mexicana no es equivalente a ninguna norma internacional por no existir referencia alguna al momento de su elaboración.	

México, D.F., a 17 de marzo de 2002.- El Director General de Normas, **Miguel Aguilar Romo.**- Rúbrica.

Concordancia con normas internacionales	
Esta Norma Mexicana no es equivalente a ninguna norma internacional por no existir referencia alguna al momento de su elaboración.	
NMX-O-222-SCFI-2004	TRACTORES, IMPLEMENTOS AGRICOLAS-SEMBRADORAS NEUMATICAS DE PRECISION-ESPECIFICACIONES Y METODO DE PRUEBA.
Campo de aplicación	
Esta Norma Mexicana establece las especificaciones mínimas de calidad y el método de prueba para evaluar el funcionamiento, desempeño, durabilidad, facilidad y seguridad de operación de las sembradoras fertilizadoras, neumáticas de precisión nuevas que se comercializan en la República Mexicana, para la siembra de diversos cultivos, principalmente maíz y frijol.	
Concordancia con normas internacionales	
Esta Norma Mexicana no es equivalente a ninguna norma internacional por no existir referencia alguna al momento de su elaboración.	

México, D.F., a 24 de septiembre de 2004.- El Director General, **Miguel Aguilar Romo**.- Rúbrica.

DECLARATORIA de vigencia de las normas mexicanas NMX-F-605-NORMEX-2004, NMX-K-361-NORMEX-2004 y NMX-K-659-NORMEX-2004.

Al margen un sello con el Escudo Nacional, que dice: Estados Unidos Mexicanos.- Secretaría de Economía.- Dirección General de Normas.

DECLARATORIA DE VIGENCIA DE LAS NORMAS MEXICANAS QUE SE INDICAN

La Secretaría de Economía, por conducto de la Dirección General de Normas, con fundamento en los artículos 34 fracciones XIII y XXX de la Ley Orgánica de la Administración Pública Federal; 51-A, 54, 66 fracciones III y V de la Ley Federal sobre Metrología y Normalización; 46 del Reglamento de la Ley Federal sobre Metrología y Normalización, y 19 fracciones I y XV del Reglamento Interior de esta Secretaría y habiéndose satisfecho el procedimiento previsto por la ley de la materia para estos efectos, expide la Declaratoria de vigencia de las normas mexicanas que se enlistan a continuación, mismas que han sido elaboradas, aprobadas y publicadas como proyectos de normas mexicanas bajo la responsabilidad del organismo nacional de normalización denominado "Sociedad Mexicana de Normalización y Certificación, S.C. (NORMEX)", lo que se hace del conocimiento de los productores, distribuidores, consumidores y del público en general. El texto completo de las normas que se indican puede ser adquirido en la sede de dicha asociación, ubicada en Circuito Geógrafos número 20, Ciudad Satélite Oriente, Naucalpan de Juárez, código postal 53101, Estado de México, o consultado gratuitamente en la biblioteca de la Dirección General de Normas de esta Secretaría, ubicada en Puente de Tecamachalco número 6, Lomas de Tecamachalco, Sección Fuentes, Naucalpan de Juárez, código postal 53950, Estado de México.

Las presentes Normas entrarán en vigor 60 días naturales después de la publicación de esta Declaratoria de vigencia en el **Diario Oficial de la Federación**.

CLAVE O CÓDIGO	TÍTULO DE LA NORMA
NMX-F-605-NORMEX-2004	ALIMENTOS-MANEJO HIGIENICO EN EL SERVICIO DE ALIMENTOS PREPARADOS PARA LA OBTENCIÓN DEL DISTINTIVO H (CANCELA A LA NMX-F-605-NORMEX-2000).
Campo de aplicación	

SECRETARIA DE ECONOMIA

DECLARATORIA de vigencia de la Norma Mexicana NMX-O-179-SCFI-2002.

Al margen un sello con el Escudo Nacional, que dice: Estados Unidos Mexicanos.- Secretaría de Economí Dirección General de Normas.

DECLARATORIA DE VIGENCIA DE LA NORMA MEXICANA QUE SE INDICA

La Secretaría de Economía, por conducto de la Dirección General de Normas, con fundamento en dispuesto por los artículos 34 fracciones XIII y XXX de la Ley Orgánica de la Administración Pública Feder 51-A, 51-B, 54 de la Ley Federal sobre Metrología y Normalización, 46 y 47 del Reglamento de la Ley Fede sobre Metrología y Normalización y 23 fracciones I y XV del Reglamento Interior de esta Secreta y habiéndose satisfecho el procedimiento previsto por la ley de la materia para estos efectos, expide declaratoria de vigencia de la norma mexicana que se enlista a continuación, misma que ha sido elabora y aprobada por el "Comité Técnico de Normalización Nacional de Maquinaria, Accesorios y Equipo Agrícol El texto completo de la norma que se indica puede ser consultado gratuitamente en la biblioteca de Dirección General de Normas de esta Secretaría, ubicada en Puente de Tecamachalco número 6, Lom de Tecamachalco, Sección Fuentes, Naucalpan de Juárez, código postal 53950, Estado de México o en Catálogo Mexicano de Normas que se encuentra en la página de Internet de la Dirección General de Norm cuya dirección es http://www.economia.gob.mx.

La presente Norma entrará en vigor 60 días naturales después de la publicación de esta declaratoria vigencia en el **Diario Oficial de la Federación.**

CLAVE O CODIGO	TITULO DE LA NORMA
NMX-O-179-SCFI-2002	TRACTORES IMPLEMENTOS Y MAQUINARIA AGRICOLA-ASPERSORAS TIP AGUILON DE TRACCION MECANICA, ACCIONADAS POR LA TOMA D POTENCIA DEL TRACTOR-ESPECIFICACIONES Y METODO DE PRUEBA.

Campo de aplicación

Esta Norma Mexicana establece las especificaciones mínimas de calidad y el método de prueba par evaluar el funcionamiento, facilidad y seguridad de operación, y durabilidad de las aspersoras tipo aguiló de tracción mecánica accionada por la toma de potencia del tractor (TDP), nuevas que se comercializan e la república mexicana.

Concordancia con normas internacionales

Esta Norma Mexicana no es equivalente a ninguna norma internacional por no existir referencia alguna a momento de su elaboración.

México, D.F., a 21 de noviembre de 2002.- El Director General, **Miguel Aguilar Romo**.- Rúbrica.

AVISO de consulta pública del Proyecto de Norma Mexicana PROY-NMX-R-002-SCFI-2002.

Al margen un sello con el Escudo Nacional, que dice: Estados Unidos Mexicanos.- Secretaría de Economí Dirección General de Normas.

AVISO DE CONSULTA PUBLICA DEL PROYECTO DE NORMA MEXICANA QUE SE INDICA

La Secretaría de Economía, por conducto de la Dirección General de Normas, con fundamento en dispuesto por los artículos 34 fracciones XIII y XXX de la Ley Orgánica de la Administración Pública Feder 51-A y 51-B de la Ley Federal sobre Metrología y Normalización y 23 fracciones I y XV del Reglamer Interior de esta Secretaría, publica el Aviso de consulta pública del Proyecto de Norma Mexicana que se lis a continuación, mismo que ha sido elaborado y aprobado por el Comité Técnico de Normalización Nacior de Documentación.

De conformidad con el artículo 51-A de la Ley Federal sobre Metrología y Normalización, este Proyecto Norma Mexicana, se publica para consulta pública a efecto de que dentro de los siguientes 60 días natural los interesados presenten sus comentarios ante el seno del Comité que lo propuso, ubicado en aveni Circunvalación sin número esquina Tabiqueros, colonia Morelos, Delegación Venustiano Carranza, 152 México, D.F., con copia a esta Dirección General, dirigida a la dirección descrita en el párrafo siguiente.

La presente Norma entrará en vigor 60 días naturales después de la publicación de esta Declaratoria de vigencia en el Diario Oficial de la Federación.

CLAVE O CODIGO	TITULO DE LA NORMA
NMX-O-169-SCFI-2002	TRACTOR AGRICOLA-DETERMINACION DE POTENCIA A LA TOMA DE FUERZA-METODO DE PRUEBA.
Campo de aplicación	
Esta Norma Mexicana establece el método de prueba para determinar la potencia a la toma de fuerza desarrollada por los tractores agrícolas nuevos que se comercialicen en la República Mexicana.	
Concordancia con normas internacionales	
Esta Norma Mexicana no es equivalente a ninguna Norma Internacional por no existir referencia alguna al momento de su elaboración.	

México, D.F., a 4 de junio de 2002.- El Director General de Normas, **Miguel Aguilar Romo**.- Rúbrica.

DECLARATORIA de vigencia de las normas mexicanas NMX-F-488-SCFI-2002, NMX-F-528-SCFI-2002, NMX-F-580-SCFI-2002, NMX-F-581-SCFI-2002, NMX-FF-004-SCFI-2002, NMX-FF-096-SCFI-2002, NMX-FF-097-SCFI-2002, NMX-FF-098-SCFI-2002 y NMX-FF-099-SCFI-2002.

Al margen un sello con el Escudo Nacional, que dice: Estados Unidos Mexicanos.- Secretaría de Economía.- Dirección General de Normas.

DECLARATORIA DE VIGENCIA DE LAS NORMAS MEXICANAS QUE SE INDICAN

La Secretaría de Economía, por conducto de la Dirección General de Normas, con fundamento en lo dispuesto por los artículos 34 fracciones XIII y XXX de la Ley Orgánica de la Administración Pública Federal; 51-A, 51-B y 54 de la Ley Federal sobre Metrología y Normalización, 46 y 47 del Reglamento de la Ley Federal sobre Metrología y Normalización, y 23 fracciones I y XV del Reglamento Interior de esta Secretaría y habiéndose satisfecho el procedimiento previsto por la ley de la materia para estos efectos, expide la Declaratoria de vigencia de las normas mexicanas que se enlistan a continuación, mismas que han sido elaboradas y aprobadas por el Comité Técnico de Normalización Nacional de Productos de la Pesca. El texto completo de las normas que se indican puede ser consultado gratuitamente en la biblioteca de la Dirección General de Normas de esta Secretaría, ubicada en Puente de Tecamachalco número 6, Lomas de Tecamachalco, Sección Fuentes, Naucalpan de Juárez, código postal 53950, Estado de México o en el Catálogo Mexicano de Normas que se encuentra en la página de Internet de la Dirección General de Normas cuya dirección es http://www.economia-normas.gob.mx.

Las presentes normas entrarán en vigor 60 días naturales después de la publicación de esta Declaratoria de vigencia en el Diario Oficial de la Federación.

CLAVE O CODIGO	TITULO DE LA NORMA
NMX-F-488-SCFI-2002	PRODUCTOS DE LA PESCA-CARNE DE TIBURON SECA SALADA-ESPECIFICACIONES (CANCELA A LA NMX-F-488-1994-SCFI).
Campo de aplicación	
Esta Norma Mexicana tiene por objeto establecer las especificaciones mínimas de calidad que debe cumplir el producto denominado carne de tiburón seca-salada, para garantizar que es apta para su consumo. Esta Norma Mexicana aplica al producto denominado carne de tiburón seca-salada que se comercializa en territorio nacional.	
Concordancia con normas internacionales	
Esta Norma no es equivalente a ninguna Norma Internacional por no existir referencia alguna al momento de su elaboración.	

SECRETARIA DE ECONOMIA

DECLARATORIA de vigencia de la Norma Mexicana NMX-R-046-SCFI-2002.

Al margen un sello con el Escudo Nacional, que dice: Estados Unidos Mexicanos.- Secretaría de Economía.- Dirección General de Normas.

DECLARATORIA DE VIGENCIA DE LA NORMA MEXICANA QUE SE INDICA

La Secretaría de Economía, por conducto de la Dirección General de Normas, con fundamento en lo dispuesto por los artículos 34 fracciones XIII y XXX de la Ley Orgánica de la Administración Pública Federal; 51-A, 51-B y 54 de la Ley Federal sobre Metrología y Normalización, 46 y 47 del Reglamento de la Ley Federal sobre Metrología y Normalización, y 23 fracciones I y XV del Reglamento Interior de esta Secretaría y habiéndose satisfecho el procedimiento previsto por la ley de la materia para estos efectos, expide la Declaratoria de vigencia de la Norma Mexicana que se enlista a continuación, misma que ha sido elaborada y aprobada por el Comité Técnico de Normalización Nacional de Parques Industriales. El texto completo de la norma que se indica puede ser consultado gratuitamente en la biblioteca de la Dirección General de Normas de esta Secretaría, ubicada en Puente de Tecamachalco número 6, Lomas de Tecamachalco, Sección Fuentes, Naucalpan de Juárez, código postal 53950, Estado de México o en el Catálogo Mexicano de Normas que se encuentra en la página de Internet de la Dirección General de Normas cuya dirección es http://www.economia-normas.gob.mx.

La presente Norma entrará en vigor 60 días naturales después de la publicación de esta Declaratoria de vigencia en el Diario Oficial de la Federación, con excepción de los subincisos 6.4.2.2, 6.4.3.2 y 6.4.4 mismos que entrarán en vigor a partir del 1 de enero del año 2005.

CLAVE O CODIGO	TITULO DE LA NORMA
NMX-R-046-SCFI-2002	PARQUES INDUSTRIALES-CLASIFICACION (CANCELA A LA NMX-R-046-SCFI-1999).
Campo de aplicación	
Esta Norma Mexicana tiene por objeto regular el desarrollo adecuado de las empresas que se establezcan en los parques industriales. Asimismo, proporciona los criterios para determinar si un desarrollo industrial puede ser catalogado como parque industrial.	
Concordancia con normas internacionales	
Esta Norma Mexicana no es equivalente a ninguna Norma Internacional por no existir referencia alguna al momento de su elaboración.	

México, D.F., a 4 de junio de 2002.- El Director General de Normas, Miguel Aguilar Romo.- Rúbrica.

DECLARATORIA de vigencia de la Norma Mexicana NMX-O-169-SCFI-2002.

Al margen un sello con el Escudo Nacional, que dice: Estados Unidos Mexicanos.- Secretaría de Economía.- Dirección General de Normas.

DECLARATORIA DE VIGENCIA DE LA NORMA MEXICANA QUE SE INDICA

La Secretaría de Economía, por conducto de la Dirección General de Normas, con fundamento en lo dispuesto por los artículos 34 fracciones XIII y XXX de la Ley Orgánica de la Administración Pública Federal; 51-A, 51-B y 54 de la Ley Federal sobre Metrología y Normalización, 46 y 47 del Reglamento de la Ley Federal sobre Metrología y Normalización, y 23 fracciones I y XV del Reglamento Interior de esta Secretaría y habiéndose satisfecho el procedimiento previsto por la ley de la materia para estos efectos, expide la Declaratoria de vigencia de la Norma Mexicana que se enlista a continuación, misma que ha sido elaborada y aprobada por el Comité Técnico de Normalización Nacional de Maquinaria, Accesorios y Equipo Agrícola. El texto completo de la norma que se indica puede ser consultado gratuitamente en la biblioteca de la Dirección General de Normas de esta Secretaría, ubicada en Puente de Tecamachalco número 6, Lomas de Tecamachalco, Sección Fuentes, Naucalpan de Juárez, código postal 53950, Estado de México o en el Catálogo Mexicano de Normas que se encuentra en la página de Internet de la Dirección General de Normas cuya dirección es http://www.economia-normas.gob.mx.

SECRETARIA DE ECONOMIA

DECLARATORIA de vigencia de las normas mexicanas NMX-O-203-SCFI-2004 y NMX-O-207-SCFI-2004.

Al margen un sello con el Escudo Nacional, que dice: Estados Unidos Mexicanos.- Secretaría de Economía.- Dirección General de Normas.

DECLARATORIA DE VIGENCIA DE LAS NORMAS MEXICANAS QUE SE INDICAN

La Secretaría de Economía, por conducto de la Dirección General de Normas, con fundamento en lo dispuesto por los artículos 34 fracciones XIII y XXX de la Ley Orgánica de la Administración Pública Federal; 51-A, 51-B, 54 de la Ley Federal sobre Metrología y Normalización, 46, 47 del Reglamento de la Ley Federal sobre Metrología y Normalización y 19 fracciones I y XV del Reglamento Interior de esta Secretaría y habiéndose satisfecho el procedimiento previsto por la ley de la materia para estos efectos, expide la declaratoria de vigencia de las normas mexicanas que se enlistan a continuación, mismas que han sido elaboradas y aprobadas por el Comité Técnico de Normalización Nacional de Maquinaria, Accesorios y Equipo Agrícola. El texto completo de las normas que se indican puede ser consultado gratuitamente en la biblioteca de la Dirección General de Normas de esta Secretaría, ubicada en Puente de Tecamachalco número 6, Lomas de Tecamachalco, sección Fuentes, Naucalpan de Juárez, código postal 53950, Estado de México o en el Catálogo Mexicano de Normas que se encuentra en la página de Internet de la Dirección General de Normas cuya dirección es http://www.economia.gob.mx.

Las presentes normas entrarán en vigor 60 días naturales después de la publicación de esta Declaratoria de vigencia en el **Diario Oficial de la Federación**.

CLAVE O CODIGO	TITULO DE LA NORMA
NMX-O-203-SCFI-2004	TRACTOR AGRICOLA-DETERMINACION DE POTENCIA Y FUERZA DE TRACCION A LA BARRA DE TIRO-METODO DE PRUEBA.
Campo de aplicación Esta Norma Mexicana establece el método de prueba para determinar la potencia y la fuerza de tracción a la barra de tiro desarrollada por los tractores agrícolas nuevos que se comercialicen en la República Mexicana.	
Concordancia con normas internacionales Esta Norma Mexicana no es equivalente a ninguna norma internacional por no existir referencia alguna al momento de su elaboración.	
NMX-O-207-SCFI-2004	TRACTOR AGRICOLA-DETERMINACION DE POTENCIA Y FUERZA DEL LEVANTE HIDRAULICO AL ENGANCHE DE TRES PUNTOS-METODO DE PRUEBA.
Campo de aplicación Esta Norma Mexicana establece el método de prueba para determinar la potencia y fuerza del levante hidráulico desarrollada por los tractores agrícolas nuevos que se comercialicen en la República Mexicana.	
Concordancia con normas internacionales Esta Norma Mexicana no es equivalente a ninguna norma internacional por no existir referencia alguna al momento de su elaboración.	

México, D.F., a 30 de marzo de 2004.- El Director General, **Miguel Aguilar Romo**.- Rúbrica.

DECLARATORIA de vigencia de las normas mexicanas NMX-L-142-SCFI-2004, NMX-L-145-SCFI-2004 NMX-L-161-SCFI-2004.

Al margen un sello con el Escudo Nacional, que dice: Estados Unidos Mexicanos.- Secretaría de Economí Dirección General de Normas.

DECLARATORIA DE VIGENCIA DE LAS NORMAS MEXICANAS QUE SE INDICAN

La Secretaría de Economía, por conducto de la Dirección General de Normas, con fundamento er dispuesto por los artículos 34 fracciones XIII y XXX de la Ley Orgánica de la Administración Pública Fed 51-A, 51-B, 54 de la Ley Federal sobre Metrología y Normalización, 46, 47 del Reglamento de la Ley Fed

DECLARATORIA de vigencia de las normas mexicanas NMX-O-181-SCFI-2003, NMX-O-182-SCFI-2003 y NMX-O-183-SCFI-2003.

Al margen un sello con el Escudo Nacional, que dice: Estados Unidos Mexicanos.- Secretaría de Economía.- Dirección General de Normas.

DECLARATORIA DE VIGENCIA DE LAS NORMAS MEXICANAS QUE SE INDICAN

La Secretaría de Economía, por conducto de la Dirección General de Normas, con fundamento en lo dispuesto por los artículos 34 fracciones XIII y XXX de la Ley Orgánica de la Administración Pública Federal; 51-A, 51-B, 54 de la Ley Federal sobre Metrología y Normalización; 46, 47 del Reglamento de la Ley Federal sobre Metrología y Normalización, y 19 fracciones I y XV del Reglamento Interior de esta Secretaría y habiéndose satisfecho el procedimiento previsto por la ley de la materia para estos efectos, expide la declaratoria de vigencia de las normas mexicanas que se enlistan a continuación, mismas que han sido elaboradas y aprobadas por el Comité Técnico de Normalización Nacional de Maquinaria, Accesorios y Equipo Agrícola. El texto completo de las normas que se indican puede ser consultado gratuitamente en la biblioteca de la Dirección General de Normas de esta Secretaría, ubicada en Puente de Tecamachalco número 6, Lomas de Tecamachalco, sección Fuentes, Naucalpan de Juárez, código postal 53950, Estado de México o en el Catálogo Mexicano de Normas que se encuentra en la página de Internet de la Dirección General de Normas cuya dirección es http://www.economia.gob.mx.

Las presentes normas entrarán en vigor 60 días naturales después de la publicación de esta declaratoria de vigencia en el **Diario Oficial de la Federación**.

CLAVE O CODIGO	TITULO DE LA NORMA
NMX-O-181-SCFI-2003	TRACTOR AGRICOLA-CABINAS Y MARCOS DE PROTECCION DE TRACTORES AGRICOLAS Y FORESTALES-ESPECIFICACIONES Y METODO DE PRUEBA (PRUEBA ESTATICA).
Campo de aplicación	
Esta Norma Mexicana establece el método de prueba para cabinas y marcos de protección de los tractores agrícolas y forestales nuevos que se comercialicen en la República Mexicana. Esta Norma Mexicana se aplica a tractores que tienen al menos dos ejes para ruedas con llantas neumáticas o con orugas en lugar de ruedas y con una masa del tractor sin lastres no menor a 800 kg. La trocha mínima de las ruedas traseras debe ser, generalmente, mayor a 1 150 mm. Se reconoce que puede haber diseños de tractores, por ejemplo, cortadoras, tractores angostos para viñedos, tractores de baja altura usados en edificios con límites de altura de paso o en huertas, tractores levantados (de alto despeje) y máquinas especiales para bosques, para los cuales esta Norma no es aplicable.	
Concordancia con normas internacionales	
Esta Norma Mexicana no es equivalente a ninguna norma internacional por no existir referencia alguna al momento de su elaboración.	
NMX-O-182-SCFI-2003	TRACTORES IMPLEMENTOS Y MAQUINARIA AGRICOLA-ARADOS DE DISCOS-ESPECIFICACIONES Y METODO DE PRUEBA.
Campo de aplicación	
Esta Norma Mexicana establece las especificaciones mínimas de calidad y el método de prueba para evaluar el funcionamiento, durabilidad, facilidad y seguridad de operación de los arados de discos nuevos, que se comercializan en la República Mexicana.	
Concordancia con normas internacionales	
Esta Norma Mexicana no es equivalente a ninguna norma internacional por no existir referencia alguna al momento de su elaboración.	
NMX-O-183-SCFI-2003	TRACTORES IMPLEMENTOS Y MAQUINARIA AGRICOLA-RASTRAS DE DISCOS DE LEVANTE-ESPECIFICACIONES Y METODO DE PRUEBA.
Campo de aplicación	
Esta Norma Mexicana establece las especificaciones mínimas de calidad y el método de prueba para evaluar el funcionamiento, facilidad y seguridad de operación, y durabilidad de las rastras de discos tipo convencional de levante, nuevas que se comercializan en la República Mexicana.	
Concordancia con normas internacionales	
Esta Norma Mexicana no es equivalente a ninguna norma internacional por no existir referencia alguna al momento de su elaboración.	

México, D.F., a 8 de abril de 2003.- El Director General, **Miguel Aguilar Romo**.- Rúbrica.

).- Por la Secretaría: el Secretario de Economía, **Fernando de Jesús Canales Clariond.**- Rúbrica.- Subsecretario para la Pequeña y Mediana Empresa, **Sergio Alejandro García de Alba Zepeda.**- Rúbrica.- Por el Gobierno del Estado: el Gobernador Constitucional del Estado, **Lázaro Cárdenas Batel.**- Rúbrica.- El Secretario de Gobierno del Estado de Michoacán, **Enrique Bautista Villegas.**- Rúbrica.- El Secretario de Planeación y Desarrollo Estatal del Estado de Michoacán, **Octavio Larios González.**- Rúbrica.- El Tesorero General del Estado de Michoacán, **Ricardo Humberto Suárez López.**- Rúbrica.- El Secretario de Desarrollo Económico del Estado de Michoacán, **Eloy Vargas Arreola.**- Rúbrica.- La Secretaria de Contraloría y Desarrollo Administrativo del Estado de Michoacán, **C. Rosa Hilda Abascal Rodríguez.**- Rúbrica.

DECLARATORIA de vigencia de las normas mexicanas NMX-O-216-SCFI-2004, NMX-O-221-SCFI-2004 y NMX-O-222-SCFI-2004.

Al margen un sello con el Escudo Nacional, que dice: Estados Unidos Mexicanos.- Secretaría de Economía.- Dirección General de Normas.

DECLARATORIA DE VIGENCIA DE LAS NORMAS MEXICANAS QUE SE INDICAN

La Secretaría de Economía, por conducto de la Dirección General de Normas, con fundamento en lo dispuesto por los artículos 34 fracciones XIII y XXX de la Ley Orgánica de la Administración Pública Federal; 51-A, 51-B y 54 de la Ley Federal sobre Metrología y Normalización; 46 y 47 del Reglamento de la Ley Federal sobre Metrología y Normalización, y 19 fracciones I y XV del Reglamento Interior de esta Secretaría y habiéndose satisfecho el procedimiento previsto por la ley de la materia para estos efectos, expide la Declaratoria de vigencia de las normas mexicanas que se enlistan a continuación, mismas que han sido elaboradas y aprobadas por el "Comité Técnico de Normalización Nacional de Maquinaria, Accesorios y Equipo Agrícola". El texto completo de las normas que se indican puede ser consultado gratuitamente en la biblioteca de la Dirección General de Normas de esta Secretaría, ubicada en Puente de Tecamachalco número 6, Lomas de Tecamachalco, Sección Fuentes, Naucalpan de Juárez, código postal 53950, Estado de México, o en el Catálogo Mexicano de Normas que se encuentra en la página de Internet de la Dirección General de Normas cuya dirección es: http://www.economia.gob.mx.

Las presentes normas entrarán en vigor 60 días naturales después de la publicación de esta Declaratoria de vigencia en el **Diario Oficial de la Federación.**

CLAVE O CODIGO	TITULO DE LA NORMA
NMX-O-216-SCFI-2004	TRACTORES, IMPLEMENTOS Y MAQUINARIA AGRICOLA-DESGRANADORAS DE MAIZ-ESPECIFICACIONES Y METODO DE PRUEBA.
Campo de aplicación	
Esta Norma Mexicana establece las especificaciones mínimas de calidad y el método de prueba para evaluar la calidad de trabajo, rendimiento, durabilidad, facilidad y seguridad de operación de las desgranadoras de maíz nuevas, que se comercializan en la República Mexicana.	
Concordancia con normas internacionales	
Esta Norma Mexicana no es equivalente a ninguna norma internacional por no existir referencia alguna al momento de su elaboración.	
NMX-O-221-SCFI-2004	TRACTORES, IMPLEMENTOS Y MAQUINARIA AGRICOLA-TRILLADORAS DE FRIJOL ESTACIONARIAS-ESPECIFICACIONES Y METODO DE PRUEBA.
Campo de aplicación	
Esta Norma Mexicana establece las especificaciones mínimas de calidad y el método de prueba para evaluar el funcionamiento, facilidad, seguridad de operación y durabilidad de las trilladoras de frijol estacionarias, nuevas que se comercializan en la República Mexicana.	