Human Resource Practices for Labor Inspectorates in Developing Countries

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Preface

This report examines the literature on labor inspection in developing countries in order to learn how human resource practices in labor enforcement agencies influence the performance of labor inspectorates in developing countries. As a supplement to a substantial literature about the advantages and disadvantages of alternative labor law regimes and the effectiveness of alternative inspection strategies, this review highlights the state of knowledge about the conditions, competencies, and incentives needed for labor inspectors in developing countries to successfully carry out their work. This report focuses on two relatively narrow questions: What qualifications and personal characteristics are necessary for individual labor inspectors in developing countries to perform their jobs well, and what human resource policies are important for creating an inspectorate with the necessary skills to function effectively? The research reported here was sponsored by the Bureau of International Labor Affairs of the U.S. Department of Labor.

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For more information on RAND Labor and Population, see http://www.rand.org/labor.html or contact the director (contact information is on the web page).
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### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CWB</td>
<td>counterproductive work behavior</td>
</tr>
<tr>
<td>HR</td>
<td>human resource</td>
</tr>
<tr>
<td>IALI</td>
<td>International Association of Labour Inspection</td>
</tr>
<tr>
<td>ILAB</td>
<td>Bureau of International Labor Affairs</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labour Organization</td>
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<tr>
<td>OSH</td>
<td>occupational safety and health</td>
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<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
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</table>
Introduction

As part of its mission to improve treatment and benefits for workers around the world, the U.S. Department of Labor’s Bureau of International Labor Affairs (ILAB) aims to help governments design more-effective means for labor rights compliance. An important means for achieving labor rights compliance is an effective labor inspection system. The objective of this report is to help identify the conditions, competencies, and incentives needed for labor inspectors, especially those in developing countries, to successfully carry out their work. Its focus is limited to what one might call the human resource (HR) issues affecting inspector effectiveness in those countries. ILAB asked RAND for a review of the relevant scientific literature examining the effects that HR practices can have on the effectiveness of labor inspectorates in developing countries.

This report focuses on two related, relatively narrow questions: What qualifications and personal characteristics are necessary for individual labor inspectors to perform their jobs well, and what HR policies are important for creating an inspectorate with the necessary skills to function effectively? Some examples of HR topics that fall within the scope of these questions are educational requirements, recruitment practices, training, compensation, and work environment. Because the success of a labor inspectorate depends on a wide range of factors apart from HR practices, it is important to demarcate the scope of this review clearly. We do not address the effectiveness of different labor law regimes. Similarly, we deemed research on tactics and strategies for carrying out inspections to be beyond the scope of our study. We do discuss several studies that discuss HR issues, such as educational and training prerequisites or inspector morale, in the context of these broader questions about what standards labor law sets and what enforcement actions inspectors take. Otherwise, we refrain from discussing the more-substantial literature on these broader questions.

Although we defined HR practices narrowly, we admitted studies covering enforcement of any type of labor standards, including occupational safety and health (OSH), minimum wages and overtime rules, and child labor restrictions. This report contains only a review of the published literature and does not present any original analysis. The initial focus of the search was on peer-reviewed journals; however, given the paucity of that literature, we also reviewed the reports produced by the International Labour Organization (ILO).

We found that very few academic studies have taken an empirical approach to testing hypotheses about the impact of HR policies on inspector effectiveness. Of the few studies that include empirical analysis, most examined inspectors in developed countries. To supplement the limited literature, we also discuss what the ILO and other authorities say about best practices for these human resources and provide some evidence about actual practices.
To find relevant academic studies on labor inspectorate practices in developing countries, we conducted an online search of academic databases (e.g., Scopus, Web of Science, EconLit), including studies in English and Spanish published after 1992. We used key terms that aligned with three categories of factors that could affect inspector performance:

- individual characteristics of inspectors (e.g., education, job-relevant abilities, belief in the mission of the agency)
- HR policies and practices (e.g., entry requirements and selection, training, performance measurement)
- other factors that could interact with the effectiveness of HR practices for labor inspectorates (e.g., amount of discretion given to inspectors, size of informal sector, national culture, legitimacy of government).

Our searches combined one or more of key terms from the three categories and one or more terms related to inspection. See the appendix for the databases and search terms we used to find articles.

Our initial search yielded 1,305 articles. One team member (first reader) eliminated 1,089 of these as having no relevance to labor inspections. Of the 216 potentially relevant articles remaining, the first reader and a second reader eliminated 167 that they judged to be uninformative about HR practices after reading the abstract, introduction, and conclusion. This left us with 35 relevant articles on labor inspections (as well as 14 others on other types of inspectors). The first reader coded these articles by subject using a list of nonexclusive classifications based on the three main categories. See the appendix for the full list of classifications and associated number of articles.

However, further review by the second reader along with a third reader determined that many of these articles were from developed-country settings or did not address any of the HR issues identified in our work plan. We kept articles from developed-country settings only if they explicitly focused on HR issues. Similarly, we excluded many of the articles about developing countries either because they did not address HR issues at all or because the treatment was descriptive and thin. We ended up using 15 studies from the database searches described in the appendix, 22 sources from the ILO, and six from other sources.

In addition to this literature review, we searched the documents in the ILO publication database (Labordoc), using “labor inspection” and related terms for the search. (Many of the ILO reports and studies do not appear in the standard databases.) Among other things, we searched for documents that could provide a structured description and comparison of HR practices in different countries. The closest category we found was the ILO country profiles, which, for each
of the selected countries, provided one or two pages of material on HR issues. Table 1 in the next section includes information from the recent studies that we found.

Lastly, we selectively reviewed studies from the pre-1993 period, almost all of which concerned labor or environmental regulation in developed countries. Despite that focus, we think that some of the insights there could have broader applicability.

Findings

In this section, we review the main HR topics addressed by our review. We begin each subsection by discussing any guidance that the ILO has provided about best practices in HR. We then use the ILO reports and academic studies to describe how developing countries actually organize their labor inspectorates and what shortcomings are apparent.

The topics we discuss are as follows:

- entry requirements for new labor inspectors (entry requirements and training are linked to issues of generalist versus specialized inspectors)
- initial and ongoing training
- turnover, staffing levels, and work conditions
- measuring and incentivizing labor inspector performance
- inspectorate culture and ethical behavior
- relationship between enforcement strategies and HR issues.

Entry Requirements for New Labor Inspectors

Although the academic literature provides little information on how inspectorates in developing countries recruit and select new labor inspectors, reports from the ILO discuss entry requirements that labor inspectorates seek or should seek from new inspectors. For example, the ILO reports that requirements for a college degree are in place in some developing countries, as Table 1 indicates. Mexico (Bensusán, 2009), Costa Rica (Ruiz, 2009), and Uganda (Abongomera, 2006) also appear to require college degrees, at least for new hires. Scientific education may be necessary for OSH enforcement, whereas legal knowledge may be required to apply penalties or facilitate coordination with the judicial system. Accordingly, some inspectorates favor engineers, doctors, or lawyers (Asrawi, 2010; Bensusán, 2009; ILO, 2006).
Table 1. Recent International Labour Organization Audit and Need-Assessment Findings on Human Resource Issues

<table>
<thead>
<tr>
<th>Country</th>
<th>Year Studied</th>
<th>College Degree Required? (^a)</th>
<th>Technical Degree Required?</th>
<th>Initial Training Provided?</th>
<th>Ongoing Training Provided?</th>
<th>Compensation Level</th>
<th>Well-Defined Career Path?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>2013</td>
<td>No</td>
<td>Yes</td>
<td>As needed</td>
<td></td>
<td>Low</td>
<td>Limited</td>
</tr>
<tr>
<td>Botswana</td>
<td>2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cambodia</td>
<td>2013</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethiopia</td>
<td>2009</td>
<td>Yes</td>
<td>Weak</td>
<td>Weak</td>
<td>Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>2010</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenya(^b)</td>
<td>2011</td>
<td>Yes</td>
<td>For OSH</td>
<td>Minimal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lesotho</td>
<td>2009</td>
<td>Yes</td>
<td></td>
<td></td>
<td>Donors(^c)</td>
<td></td>
<td>Limited</td>
</tr>
<tr>
<td>Malawi</td>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td>Donors</td>
<td>Low</td>
<td>Limited</td>
</tr>
<tr>
<td>Namibia</td>
<td>2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Low</td>
<td>Limited</td>
</tr>
<tr>
<td>Nepal</td>
<td>2013</td>
<td>No</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>2013</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td></td>
<td>Low</td>
<td>Limited</td>
</tr>
<tr>
<td>Tanzania</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mainland</td>
<td>2010</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
<td>Some</td>
</tr>
<tr>
<td>Zanzibar</td>
<td>2010</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Low</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Uganda</td>
<td>2013</td>
<td>Yes, new</td>
<td></td>
<td></td>
<td>Occasional</td>
<td>Low</td>
<td>Limited</td>
</tr>
<tr>
<td>Vietnam</td>
<td>2013</td>
<td>Yes</td>
<td>3 years of courses</td>
<td>At least 1 week</td>
<td>30%-&gt;civil service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambia</td>
<td>2009</td>
<td>Yes, new</td>
<td></td>
<td></td>
<td></td>
<td>Low</td>
<td>Limited</td>
</tr>
</tbody>
</table>


\(^a\) Refers to undergraduate, or bachelor’s, degree.

\(^b\) No labor inspectors hired since 1993.

\(^c\) Donors indicates that training occurred only if international donors provided it.

In Table 1, we identify whether the ILO’s country profiles on labor inspection provide information about the topic headings. A blank cell indicates that we were unable to find clear information on that topic in those documents.

Some of the educational requirements for inspectors appear to have been upgraded recently. For example, in 1998, McGuinness reported that the minimum requirements for obtaining a Mexican labor inspector position were a junior high school education and an interest in the subject areas related to the profession. By 2008, Bensusán observed that more than half of Mexican inspectors in 2007 had degrees in engineering or law, although the inspectors were not being paid according to their education levels.

Von Richthofen (2002), who authored a major ILO document on labor inspection practices, stressed the importance of noncognitive qualifications in evaluating job candidates for labor inspectorates. He highlights motivation, self-reliance, and “ability to combine firmness with
diplomacy” in particular. The ILO reports that some developing countries have established noneducational job requirements for inspectors. However, the explicit requirements noted by the ILO focus less on personality traits, such as self-reliance, than on physical and mental health (ILO, 2006).

A broader issue tied to entry requirements for new inspectors, as well as the need for inspector training, is the level of inspector specialization. ILO documents discuss specialization at two levels. The most common usage is to distinguish between systems in which a single enforcement officer is responsible for all labor regulations and systems that handle health and safety enforcement separately from wage and hour enforcement, collective bargaining, and other legal requirements. Second, within workplace safety and health, there are distinctions between inspectors who cover both and inspectors who specialize in either safety or health. On both levels, inspectorates may face a trade-off between breadth and depth of expertise. Inspectors who are responsible for the full range of labor regulations—generalists in the first, more widely used sense—may have less technical expertise in safety and health. Inspectors who are simultaneously responsible for safety and health regulations but not other labor laws—generalists in the second, narrower sense—may have less technical expertise in health and industrial hygiene.

Our literature review found no empirical analysis on the relative merits of specialists or generalists. This is likely to reflect a fundamental identification problem: The division of enforcement responsibilities across inspectors almost never varies within countries over time, making it impossible to isolate the impact of specialization from effects of other fixed or slow-moving factors that vary across countries, such as overall governance, labor relations, or culture.

In our review of official documents from the ILO, we did find advocates for both types of inspectors. Advocates for specialists were more common in the early 1990s (Derrien, Xirau, and Cano, 1993), but, for most of the past 20 years, the ILO literature has shown a preference for generalists. In their argument for specialists, Derrien and colleagues noted that generalists would lack substantive knowledge to perform inspections and that it would be better to hire technical people and give them legal training than to give technical training to nontechnical people. The main counterargument is that “one of the most costly aspects of an inspectorate is getting the inspector to the front door of an enterprise” (von Richthofen, 2002, p. 102). Once the inspector is on site, it makes sense that he or she review compliance with all requirements, especially because workplaces will probably not be reinspected very frequently.

Piore and Schrank (2008) present another argument for generalist inspectors. They point out that, when different inspectors come from different agencies, each inspector focuses only on the violations of his or her program, without regard to other issues at the site. In fact, however, firms might have many problems and might not be able to address them all, at least not at the same time. A generalist inspector is in a better position to weigh the competing priorities of different issues. However, Piore and Schrank also note that inspectors have great discretion under this approach, which makes it more difficult to figure out how to assess their performance.
Another issue that should be relevant to the discussion of generalist inspectors is whether there is a positive relationship between safety problems and noncompliance with other labor standards. This may vary across countries and over time with labor market conditions and the production technology in use, so it may not be possible to provide general guidance on these grounds. In developed societies, the apparel industry, for example, is likely to have a relatively difficult time complying with minimum-wage rules but might have low fatality rates and pose less severe safety risks than heavy manufacturing does. For that reason, employing inspectors who could look at both types of problems might not add much value to inspections in that industry.

Labor inspectors in Mexico are generalists responsible for the application of all regulations within the labor code.\(^1\) Piore (2004) mentions that Mexican inspectors not only have ample discretion to apply regulations but also, because many are engineers with experience in a variety of sectors, they can work with businesses to aid them in complying with regulations. However, the role of virtual consultant can “easily become a cover for willful violations, for outright corruption or, essentially a subsidy for underinvestment and inefficient management” (Piore, 2004, p. 13).

**Initial and Ongoing Training**

The ILO places heavy emphasis on formal training for labor inspectors: “Training will probably be the single most important tool at the disposal of labour inspection managers to improve the performance of their inspectors and support staff and, in consequence, that of their organization” (von Richthofen, 2002, p. 109). Drawing on practices in successful inspectorates in western Europe and the United States, the ILO’s guide to labor inspection urges inspectorates to adopt “a clear and comprehensive training policy” (von Richthofen, 2002, p. 110). But, in fact, there is little evidence about the relative importance of training versus incentives and other management tools for making inspectors successful in their work.

The ILO’s description of best practices regarding training provides useful context for understanding the shortcomings they identify in many developing-country settings. Both initial training and ongoing training contribute to a variety of goals. Initial training is necessary to ensure that inspectors understand the law, to impart prevention techniques, to help inspectors understand the behavior and organization of the workplaces they will inspect, to enable inspectors to recognize OSH and other employment law violations, and to provide inspectors with the practical bureaucratic knowledge necessary to impose sanctions or initiate legal proceedings. In addition to these specialized forms of knowledge, the ILO advocates initial training as a way to help inspectors build important noncognitive skills related to persuasion and

\(^1\) A reviewer pointed out that it is difficult to generalize about Mexico, which has a federal system with multiple agencies responsible for inspection in different places. Also, there is a degree of specialization in the federal inspectorate.
conflict management. Furthermore, initial training can serve to improve motivation and inculcate a professional identity among the inspectors.

The ILO also emphasizes a systematic approach to ongoing training as a best practice. In successful systems, the labor inspectorate may provide official update training to reflect changes in the legal environment or new technology. Ongoing training would be facilitated by providing payment for training time.

As Table 1 indicates, ongoing training is often conspicuously absent in developing countries. Some countries, such as Papua New Guinea, have no systematic training at all. In the poorest countries, training often occurs only in response to specific programs funded by donors outside the country. Other systems provide initial training but do not tailor the training to labor inspections; these systems offer a general introduction for all civil servants, which is unlikely to help inspectors learn how to meet the specific demands of their profession. Some audits, such as the one for Ethiopia, highlighted a dire need for training in legal procedures and interpersonal skills (especially conflict management). The ILO audits do not report many instances of comprehensive training policies that combine both initial and ongoing training (ILO, 2006). Exceptions include the Dominican Republic, which reportedly has a major training program (Schrank, 2013), and Brazil, where there is a tailored six-week curriculum followed by an explicit mentoring process with more-experienced inspectors. A strong inspectors’ union in Brazil has helped to establish a training institute that provides continuing training in addition to the initial training (ILO, 2010a). Vietnam also reports a more extensive training effort than most developing countries provide.

### Turnover, Staffing Levels, and Work Conditions

The ILO has identified high turnover as an almost universal problem for developing-country inspectorates. Its reports commonly cite similar factors as causes of high turnover. In some countries (e.g., Bolivia [Ruiz, 2009]), low base salaries and intermittent work lead inspectors to take second jobs. In addition to low base pay, insufficient salary growth over time and the lack of opportunities for advancement within the inspectorate can lead to high attrition. Inspectors with higher educational attainment may be more difficult to retain because their alternatives will generally pay more (e.g., Ethiopia [ILO, 2009]).

A related concern for inspector turnover is low staffing levels. Measured by the ratio of inspectors to workers, the ILO reports staffing levels between 50 and 250 inspectors per million workers in selected western and northern European countries. This sort of measurement exercise is inherently difficult because the available data often include support staff members who do not conduct inspections. An informative cross-country comparison of staffing ratios would also require accounting for which workers are covered by labor law; agricultural workers and those in the informal sector often are not. Even with those caveats in mind, the available data make it clear that staffing levels in some developing countries have been substantially lower than in
developed countries. Ethiopia had roughly four inspectors per million workers in 2009, while Ecuador had about six inspectors per million workers in 2005. The ILO reports staffing ratios between ten and 80 inspectors per million workers in most developing Latin American countries as of 2007 (Ruiz, 2009).

Bhorat, Kanbur, and Mayet (2012) examined how the level of staffing in districts in South Africa affected compliance with minimum-wage laws and found no impact. In contrast, Ronconi (2010) used a panel study and found that the number of labor inspectors per capita across Argentina’s states did increase compliance with wage and hour legislation there.

In addition to low staffing, one widely noted shortcoming of developing-country inspectorates is a severe lack of adequate facilities, office supplies, and other resources required to carry out inspections. The ILO reports that inspectors’ productivity in some countries is hampered by insufficient access to office space, paper, stationery, furniture, electricity, and even running water. These include Benin, Mali, Mauritania, Costa Rica, Uruguay, Guatemala, and Peru (ILO, 2006). Insufficient travel resources are cited for many developing countries as a serious concern. Some nationwide inspection forces have only a single official vehicle (e.g., Burundi and Peru) or may be unable to keep vehicles in working condition (e.g., Philippines and Costa Rica). In other systems, inspectors are expected to rely on public transport and do not have a reliable travel budget (ILO, 2010b). Surprisingly, the ILO reports insufficient provision of these basic job resources in middle-income Latin American and southeast Asian countries (e.g., Costa Rica, Uruguay, Brazil, Guatemala, Peru, and the Philippines) and not just in low-income African countries (e.g., Benin and Mali). Although these are not HR problems in and of themselves, they seem noteworthy here because it seems likely that inadequate job resources undermine morale and exacerbate turnover problems: For Uganda, the ILO reports that staff frustration with insufficient human and financial resources was the primary reason for high turnover (ILO, 2010b).

Several Latin American countries—including Chile, Brazil, Argentina, Uruguay, Nicaragua, and El Salvador—have made substantial reforms to reduce turnover by establishing a more explicit career path for inspectors (Ruiz, 2009). Costa Rica has introduced incentive-based pay to increase labor inspectors’ salaries above pay levels in the general civil service. The ILO and others have identified Brazil and the Dominican Republic as countries where good pay and long-term career opportunities have helped build successful inspectorates (Pires, 2010; ILO, 2010a).

**Measuring and Incentivizing Labor Inspector Performance**

Designing methods to assess the performance of labor inspectors has been an ongoing challenge to the field. The International Association of Labour Inspection (IALI) recently published a book (Tosine and Wedge, 2013) examining some of the options, but most of these require the kind of data systems that only developed societies are likely to have.
Attempts to measure performance in any way other than the number of inspections conducted are rare in developing countries. Using number of inspections as a performance metric, some nations have implemented pay-for-performance policies to monitor and incentivize inspector performance. For example, prior to 2008, some regional inspectorates in Brazil based compensation on the number of inspections performed or on the amount of unpaid taxes collected. However, the ILO has voiced concern that performance incentives in Argentina and Brazil had distorted the targeting of inspections. Specifically, Pires (2010) argues that inspectors working in pay-for-performance systems focused narrowly on their performance measures yet were outperformed by small teams that were exempted from the performance measures and allowed to design their own approaches. Civil service reforms in 2008 eliminated bonuses based on individual productivity (ILO, 2010a). A more distal, but perhaps meaningful, measure of inspector performance relates to the effects of inspections at the inspected establishments (i.e., specific deterrence) and the effects on those that are not inspected (i.e., general deterrence). However, linking the measures of effects to individual inspector performance is difficult. It requires a large number of inspections by each inspector (i.e., large sample size), as well as data on other characteristics that may affect the impact of inspections.

Although ILO audits criticize the use of explicit performance targets in Latin America, audits in other regions suggest that such targets may be helpful in other settings. For example, an evaluation of Ethiopia’s inspectorate noted huge disparities across offices in the number of inspections carried out per inspector per month, prompting the ILO to recommend the establishment of explicit performance targets.

Because of the difficulties of using injury rates, more-developed societies have turned to output and process measures, such as the number of serious violations cited or the number of employer appeals.

Other fields of labor inspection often have more-straightforward measures. These have included the amounts of back wages paid to employees and, for child labor programs, the number of children removed from unacceptable work.

The disappointing outcomes of incentive pay for inspectors in Brazil may reflect a larger difficulty with pay-for-performance systems: Incentives based on narrow performance measures will be counterproductive if measured performance is improved by reducing effort exerted on unmeasured aspects of the job. The more complex the task is, the more difficult it can be to define any adequate proxy for performance that eliminates incentives to shirk on the unmeasured tasks. Labor inspection might be sufficiently complex that no effective incentive pay system could ever be constructed.

As an alternative to monetary incentives for inspector performance, teamwork may act as a performance incentive. For example, Pires (2010) attempts to compare the effectiveness of two

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2 This is because of the difficulty of establishing what would have happened in the absence of the inspection, especially at workplaces with only a few injuries.
approaches to labor inspection used in Brazil. The first he describes as the standard pattern, in which the chief incentive provided to inspectors is meeting the goal for the number of inspections they conduct. He contrasts this with a series of initiatives related to several different labor laws, in which small teams of inspectors were created and encouraged to be more creative. One path they took was to reach out to other organizations whose data and resources could be useful for helping them to improve their ability to find noncompliance. Pires acknowledges, however, that these special efforts may not help an agency address the day-to-day needs to respond to workers’ complaints or to emergencies. As a result, he suggests that both types of activities are needed.

A long-time Occupational Safety and Health Administration (OSHA) official in the United States agreed that inspectors often looked forward to team approaches that allowed them to be more inventive and more social. However, OSHA’s own experience in trying to reinvent its area offices in the 1990s provides an example of an approach that was not sustainable. A study of that experience by Simon and Sparrow (1997) reported that inspectors were told to work together to solve problems rather than to focus on the number of inspections. However, they sometimes found it difficult to figure out what that meant they should do. Meanwhile, the number of inspections plummeted, and opposition to the program quickly mounted until it was abandoned.

One factor that may affect inspector performance is work experience. Evidence from two studies in the United States indicates that greater experience leads to better outcomes of safety and health inspections—measured by the changes in injury rates at the inspected establishments. Controlling for other factors associated with inspection outcomes and limiting the sample to inspectors with more than a minimum number of inspections, both studies found that injury rates after inspection fell more when more-experienced inspectors were involved. The study by Guo (1999) examined OSHA inspectors, and the study by Haviland et al. (2012) examined California Division of Occupational Safety and Health inspectors.

Inspectorate Culture and Ethical Behavior

An important facet of job performance is counterproductive work behavior (CWB), which is intentional behavior enacted by a member of the organization that is viewed as “contrary to [the organization’s] legitimate interests” (Sackett and DeVore, 2001, p. 145). Counterproductive behaviors include corruption and other forms of dishonesty in the workplace. Predictors of CWBs are multifaceted, with organizational and national context interacting in complex ways to influence such CWBs as corruption. For example, Martin et al. (2007) studied bribery risk in local firms in 38 countries and showed that individualist countries tended to have higher bribery levels, but countries that spend more on social-welfare programs and have legitimate institutions to impose regulations tended to have lower bribery activity. At the organizational level, perceived intensity of competition with other organizations and perceptions of financial constraints also related to increased bribery activity. Although this study does not apply to labor
inspectors specifically, the findings suggest that some factors, such as legitimacy of institutions—a problem for many developing nations—can be important predictors of bribery.

Given the incentive to hide corrupt behavior by those who practice it and the difficulties that the ILO audit teams face in raising issues of corruption with the agencies that they are trying to assist, not much hard evidence about corrupt behavior by labor inspectors is presented in the writings of academics or of the ILO. An exception was Ruthven’s (2010) study of enforcement in Moradabad, India, which found widespread corruption. Inspectors’ discretion about which worksites to inspect increased their ability to collect from employers, even ones they did not inspect. Ruthven also reports that it is administratively costly to challenge an inspector’s report and to discipline an inspector. To the extent that the workforce believes in the mission of the agency, the inspectors should be less likely to engage in counterproductive behaviors, such as extortion. Also, the less discretion that inspectors exercise, the less able they are to provide anything of value to potential bribers.

**Relationship Between Enforcement and Human Resource Issues**

Although our study does not directly address enforcement strategies, it is important to note that different strategies can have important implications for HR. In her studies of environmental inspections in the United Kingdom, Hutter (1989) emphasized the importance of the relation between the enforcement official and the regulated entity. In particular, she cited “relational distance,” the greater difficulty in adopting a tough stance toward the regulated the closer one is to that community. Shover, Clelland, and Lynxwiler (1982) found that surface mining inspectors in the United States with lengthy assignments to single mines were less likely to demand stringent enforcement. Similarly, a study of offshore oil platforms in the Gulf of Mexico (Muehlenbachs, Staubli, and Cohen, 2013) found that length of time at an assignment was linked to laxer enforcement. It also found that adding members to an inspection team increased stringency. Although empirical studies of this issue in poor countries are not available, von Richthofen (2002) also suggested that inspectors should not be kept in the same industry sector for long periods because they “tend to have an insufficiently critical and questioning attitude to long-established practices” (p. 160).

It also seems very likely that more-adversarial inspection strategies increase the psychological strain on inspectors, at least compared with a system that relies more on persuasion and information. However, if stringency is required, inspectors may take refuge in “going by the book” (Bardach and Kagan, 1982). An insistence that “my hands are tied” may help to insulate an inspector from a worksite’s efforts to apply pressure. Hutter (1989) makes the further point that, for “persuasion” to be an effective strategy, it is probably necessary that there be opportunities for at least several interactions to occur. Persuasion and education can require time, and the inspector needs to be able to follow up to ensure that the worksite is not simply
being evasive. Therefore, if strict enforcement is not the only or even the major goal, the admonition to avoid long-term relationships may not be compelling.

Schrank (2013) describes efforts in the Dominican Republic to make labor inspection more professional and less adversarial. Beginning in the 1990s, the government tripled inspector pay, recruited law-school graduates, used a competitive examination, instituted merit promotions, enhanced job security, and established a career ladder within the inspectorate. Meanwhile, inspectors became flexible and pragmatic in their approach to enforcement, emphasizing prevention over punitive measures. The inspectors describe themselves as “pedagogical agents” tasked with helping employers develop compliance plans. Schrank argues that flexibility and a collaborative mind-set reduce the economic burden of enforcement and improve stakeholder satisfaction and compliance.

Von Richthofen (2002) also recommends that inspectors provide advice to employers, rather than simply acting as police; however, because they need to be efficient in reaching the optimal number of worksites, inspectors needed to stop short of acting as consultants. The relative merits of more-adversarial or more-collaborative approaches are beyond the scope of our focus on HR issues. Given the absence of information about changes in compliance associated with different approaches, it is difficult to assess those approaches.

Limitations

The paucity of analytical studies of labor inspectorates, especially in developing countries, makes it difficult to draw lessons about the impact of HR practices on the inspectorates’ work.

As a result, part of our review is descriptive. The paucity of literature also limited the number of topics we discuss in our review. Although we organized the literature search using three categories of factors that could affect labor inspector effectiveness, we do not organize the report according to these three categories. Instead, we identified themes with enough material using our codes of study and report features. We derive these codes from the three categories of factors related to labor inspector effectiveness.

In addition to the limited scholarly work, the descriptive material from the ILO and other reports suffers from limitations. Data on inspectorates in poor countries are often difficult to obtain. Changes in inspectorate policies and practices sometimes occur rapidly. Therefore, the descriptive material reported here might not be current or accurate, even if it we base it on data collected in the past few years.

A final limitation is that we reviewed literature in only English and Spanish. Studies written in other languages may provide information on HR-relevant practices for labor inspectors that we do not discuss in this report.
Conclusion

The objective of this study was to try to identify the conditions, competencies, and incentives needed for labor inspectors to carry out their work effectively, especially in developing countries. Unfortunately, few studies on labor inspections in developing countries went beyond simple description. Even description was quite limited because there was often little or no information available about the characteristics of inspections and their results. Despite the paucity of studies and the limited measures available, we offer several suggestions based on the review.

One concerns the debate about specialist versus generalist inspectors. The argument for generalists seems strongest in the poorest countries. In those countries, technical knowledge is rare, and transportation difficulties are likely to loom especially large. Even for middle-income countries, we point out that the choice should depend as well on the likely overlap of OSH hazards and other labor standard violations. Some of the ILO descriptions of labor inspectorates indicate, however, that the roles are often specialized and that there are bureaucratic obstacles to combining them.

We also relied on audits of labor inspectorates conducted by the ILO to provide a rough description of some HR practices. Creating a taxonomy and filling in the boxes is a small, but useful, step in developing a database that could be used to carry out more-careful studies of both changes over time and differences among countries.

The finding about the beneficial role of experience for OSH inspectors in the United States may apply to poor countries. However, studies in developing countries and outside the OSH context would be needed to validate the finding outside the United States.

Although keeping an inspector in one location for long periods improves the information that the inspector has, doing so might also make rigorous enforcement of regulations more difficult. On the other hand, an inspector’s familiarity with the operation and his or her ability to develop a longer-term relationship might foster a more collaborative approach to oversight.

Are there insights for ILAB into the role that it might play to help labor inspectorates in developing countries? Part of ILAB’s role is to foster research. Given the weak state of data systems in very poor countries, we think that the most useful research for such countries is qualitative—describing what inspectors actually do and why. For middle-income countries that have been improving their data systems, ILAB could aid those efforts so that researchers could use them to better understand, at least, the relationship between inspection activities and output measures (e.g., hazards detected, violations cited, back wages paid, children removed from illegal conditions).

More broadly, efforts to improve labor inspection will probably proceed apace with broader efforts to improve the quality of the civil service in developing countries. Therefore, ILAB
should attempt to participate in those efforts to take advantage of ideas with applicability to labor inspection.

Appendix: Databases and Search Terms

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\(^{a}\) Years searched: 1993 to 2013.
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\(^{c}\) Date searched: October 10, 2013.
\(^{d}\) Publication type: all (includes dissertations).
\(^{e}\) Language searched: English.
\(^{f}\) Date searched: October 11, 2013.
\(^{g}\) Publication type: all (includes journals, periodicals [trade], and news).
\(^{h}\) Publication type: all.
\(^{i}\) We had to take out “compliance officer*” in this search; it was retrieving thousands of banking and financial-industry results.

## References


Bensusán, Graciela, *Regulaciones laborales, calidad de los empleos y modelos de inspección: México en el contexto latinoamericano*, United Nations Economic Commission for Latin
America and the Caribbean, LC/MEX/L.861, May 2008. As of November 5, 2014:


http://labordoc.ilo.org/record/295096?ln=en


Haviland, Amelia M., Regan Main, Wayne B. Gray, Jing Xia, and John Mendeloff, Are There Unusually Effective Occupational Safety and Health Inspectors and Inspection Practices? Santa Monica, Calif.: RAND Corporation, WR-914-CHSWC, 2012. As of November 5, 2014:
http://www.rand.org/pubs/working_papers/WR914.html


ILO—See International Labour Organization.


